SPECTRUM®

# EMME/EMM-E6
# Management Module Guide

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The Complete Networking Solution™

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# Preface

Use this guide as a reference for the SPECTRUM EMME/EMM-E6 management software. Before using this guide, you should be familiar with SPECTRUM's functions and navigational techniques.

For the purposes of this guide, EMME/EMM-E6 is referred to as "device."

## What Is in This Guide

The following outlines the organization of the **EMME/EMM-E6 Management Module Guide**:

| Chapter | Description |
|---|---|
| Chapter 1<br>*Introduction* | Describes the device, the management module software, and model types. |
| Chapter 2<br>*Device Views* | Describes the Device views representing the device, connected repeaters, and other views and information accessed from these views. |
| Chapter 3<br>*Configuration Views* | Describes the Configuration views for the device and the network management information provided by these views. |
| Chapter 4<br>*Event and Alarm Messages* | Lists and explains the event and alarm messages generated in the Event Log of Alarm Manager for the device model type. |
| Chapter 5<br>*Application View* | Describes the Application view and application-specific information within the Application view for this device. |

# Conventions

In this manual the following conventions are used.

- Menu selections and buttons referenced in text appear in **bold**; for example, **Configuration** or **Detail**.
- Buttons' names appear in shadowed boxes when introducing paragraphs describing their use; for example,

**Detail**

- Menu navigation appears in order of selection; for example, **Icon Subviews -> Utilities -> Application**.
- Referenced chapter titles and section headings appear in *italics.*
- Referenced documents appear in ***bold italics***.
- EMME/EMM-E6 is referred to as "device."

# Related SPECTRUM Documentation

It is important when using this guide that you have a clear understanding of SPECTRUM functionality and navigational techniques as described in the Administration, Operation, and following documentation:

***Report Generator User's Guide***

***Getting Started with SPECTRUM 5.0 for Operators***

***Getting Started with SPECTRUM 5.0 for Administrators***

***How to Manage Your Network with SPECTRUM***

This guide also references the following documents:

***SPECTRUM Portable Management Application for the EMME User's Guide***

***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***

***SPECTRUM Portable Management Application Tools Guide***

***How to Manage Your Network with SPECTRUM***

***Routing Services Management Module Guide***

# Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

Martin, James, Kathleen Kavanagh Chapman, Joe Leben. ***Local Area Networks: Architectures and Implementations***, 2d ed. Englewood Cliffs, NJ: Prentice Hall, 1994.

Rose, Marshall T. ***The Simple Book: An Introduction to Management of TCP/IP-based Internets***. Englewood Cliffs, NJ: Prentice Hall, 1991.

Stallings, William. ***Data and Computer Communications***, 4th ed. New York: Macmillan Publishing Company, 1994.

Tanenbaum, Andrew S. ***Computer Networks***, 3d ed. Englewood Cliffs, NJ: Prentice Hall, 1996.

# Chapter 1

# Introduction

## What Is in This Chapter

This chapter introduces the SPECTRUM Management Module for the EMME/EMM-E6. It describes the following:

- EMME/EMM-E6
- SPECTRUM Support
  - Modeling Instructions
  - Accessing SPECTRUM views from the Device Icon
  - Accessing Device-Specific Subviews
- SPECTRUM Views Roadmap
- SPMA Support

# EMME/EMM-E6

The EMME (Ethernet Management Module for Ethernet) and EMM-E6 (Ethernet Management Module for Ethernet with six ports) are multi-port intelligent bridging modules installed in the right most slot of an MMAC FNB chassis. They have channels which act as bridge ports (Channels A, B, C, D, E, and F). Channels A, B, and C also act as repeater ports and direct traffic over the MMAC Flexible Network Bus (or backplane). Additionally, Cabletron Systems FDDI modules for the MMAC FNB provide Ethernet to Fiber Distributed Data Interface (FDDI) bridging capabilities.

With the addition of Repeater Management Control module (RMIM)in the chassis, the EMME and EMM-E6 function as bridges between up to three Ethernet 802.3 subnetworks and an Ethernet backbone (fourth) network. The Repeater MIMs use and control Channels B and C. Other modules use Channel A and are controlled by the EMME or EMM-E6. Channels D1 and D2 are the AUI ports on the EMME and EMM-E6, and direct traffic to one of two external Ethernet Port Interface Modules (EPIMs). One D port is operational at a time, while the other D port is the redundant port and is in **STDBY** (standby) or **OFF**.

The EMM-E6 allows you to monitor, configure, and bridge/route between channels A, B, and C on the backplane, a fourth external Ethernet via an EPIM, and two BRIM ports. Optional BRIMs perform the same bridging functions as EPIMs; they transfer packets between different channels. However, unlike EPIMs, BRIMs bridge these packets from one technology to another (e.g., Ethernet to FDDI network backbones, Asynchronous Transfer Mode [ATM] to Wide Area, etc.). These BRIMs occupy the E and F channels. The following BRIMs may be installed:

- **BRIM-E6**: Ethernet interface
- **BRIM-W6**: WAN interface (not supported at this time)
- **BRIM-A6**: ATM interface
- **BRIM-F6**: FDDI interface

# SPECTRUM Support

The following model type names refer to the models used to specify attributes, actions, and associations for the EMME and EMM-E6 devices in SPECTRUM:

- **HubCSIEMME** (EMME)
- **BRtrCSIEMM_E6** (EMM-E6)

Standard RMON (RMONApp) DLM (DLM_Agent) and Routing Services (CtRouter) are also supported and may be purchased separately.

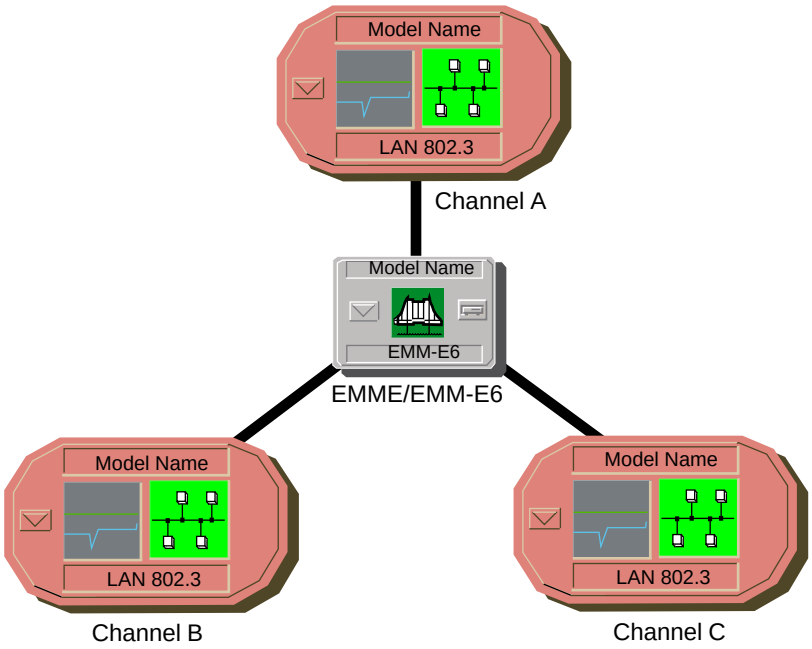
## Modeling Instructions

It is recommended that you model all devices in SPECTRUM using the AutoDiscovery. However, if you wish to model your device manually, follow the steps below.

1. Model an EMME/EMM-E6. (Refer to ***How to Manage Your Network with SPECTRUM*** for basic modeling instructions.)
2. Access the EMME/EMM-E6 Device Topology view to determine how many repeater ports are being used on the backplane of this device.
3. For each repeater connection (Network A, B, or C) shown in the Device Topology view, model a separate LAN icon (LAN_802_3) on the same hierarchical level as the EMME/EMM-E6 device icon. (The names of the LANs should correspond with the names of repeater ports they will be connected to.)
4. Within the EMME/EMM-E6 Device Topology (DevTop) view, select **File** -> **Edit** to enter the edit mode.
5. Highlight a single repeater icon.
6. Select **Edit** -> **Copy**.
7. Click **OK** in the confirmation window to override the buffer.
8. Open the LAN model created in step 3 with name that corresponds with the name of the repeater you copied in the previous step.
9. Enter the edit mode by selecting **File** -> **Edit**.
10. Select **Edit** -> **Paste** to paste the repeater icon into the LAN.
11. Select **File** -> **Save and Close** to complete the pasting process. The off-page EMME/EMM-E6 icon (in shape of the triangle) should appear, signifying the connection between the repeater and the EMME/EMM-E6 backplane.

Repeat the same actions for each repeater icon found in the Device Topology view of the EMME/EMM-E6. The connections established will appear in the topology view where EMME/EMM-E6 and network LAN icons were originally modeled, as well as in the EMME/EMM-E6 Device Topology (Dev Top) view. Figure 1-1 shows an example of the EMME model configuration that includes three channels connected to three repeaters. The EMM-E6 may have additional BRIM channel connections, which are not shown in this example.

**Figure 1-1. Example of an EMME Model Configuration**



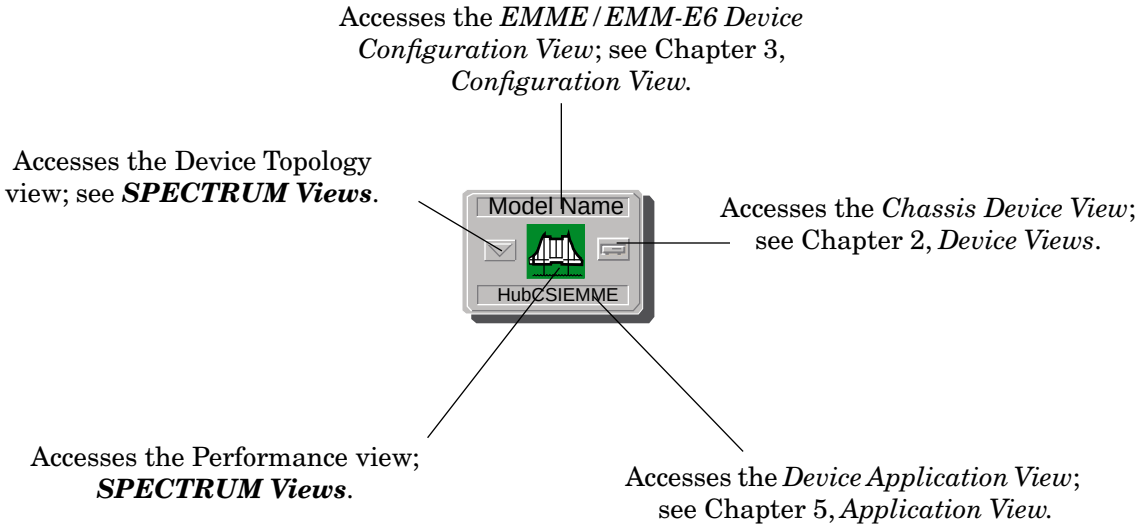

# Accessing SPECTRUM Views from the Device Icon

The Device icon provides access to SPECTRUM views that display device-specific information. Access these views through double-click zones (Figure 1-2) or the Icon Subviews menus (Figure 1-3). Placing your cursor over a double-click zone lets you see the name of the view accessed by double-clicking that zone.

To access the Icon Subviews menu, as shown in Figure 1-4, do the following:

1. Highlight the icon.
2. From the View menu select **Icon Subviews** or click the applicable mouse button (middle or right). Refer to ***Getting Started with SPECTRUM for Operator's*** for information on configuring your mouse.

**Figure 1-2. Using Double-Click Zones to Access SPECTRUM Views**


Accesses the *EMME / EMM-E6 Device Configuration View*; see Chapter 3, *Configuration View.*
Accesses the Device Topology view; see ***SPECTRUM Views***.
Model Name
HubCSIEMME
Accesses the *Chassis Device View*; see Chapter 2, *Device Views*.
Accesses the Performance view; ***SPECTRUM Views***.
Accesses the *Device Application View*; see Chapter 5, *Application View.*

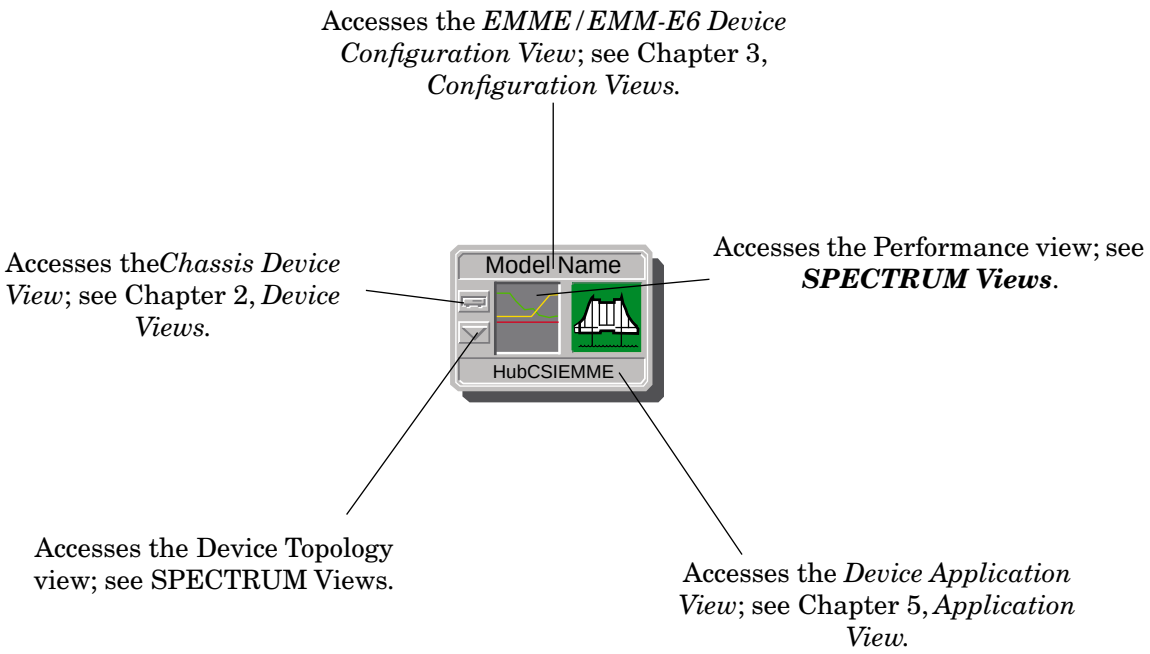
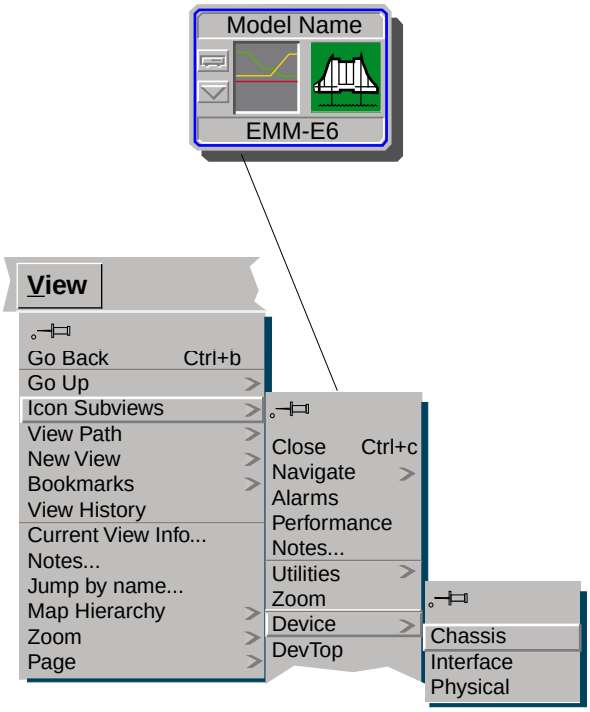

Accesses the *EMME / EMM-E6 Device Configuration View*; see Chapter 3, *Configuration Views.*
Accesses the*Chassis Device View*; see Chapter 2, *Device Views.*
Model Name
HubCSIEMME
Accesses the Performance view; see ***SPECTRUM Views***.
Accesses the Device Topology view; see SPECTRUM Views.
Accesses the *Device Application View*; see Chapter 5, *Application View.*

**Figure 1-3. Using the Icon Subviews Menu to Access SPECTRUM Views**




# Accessing Device-Specific Subviews

Icon Subviews menus provide access to views that display device-specific information. Figure 1-4 shows an example of an Icon Subviews menu for an Application label on the Chassis Module icon located in the Chassis Device view. The device-specific Icon Subviews menu selections are described under the applicable section within this guide. The menu selections that are common to all devices are described in ***SPECTRUM Menus***.

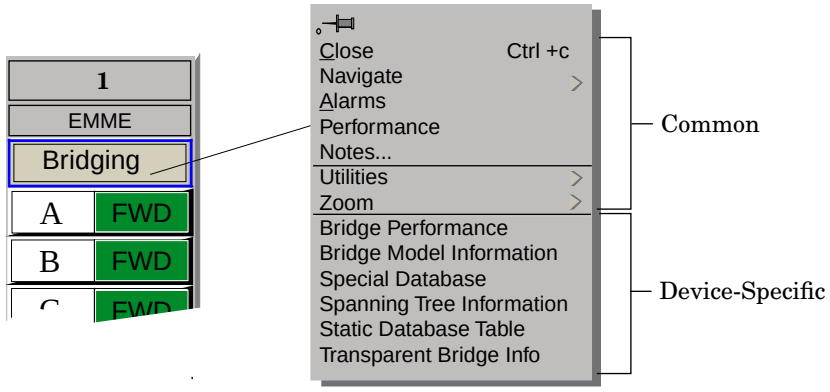
To access the Icon Subviews menu using the View menu, do the following:

1. Highlight the icon.
2. From the View menu, select **Icon Subviews**.

To access the Icon Subviews menu using the mouse button, do the following:

1. Position the mouse pointer on the icon.
2. Click the applicable mouse button (middle or right). Refer to ***Getting Started with SPECTRUM for Operator's*** for information on configuring your mouse.

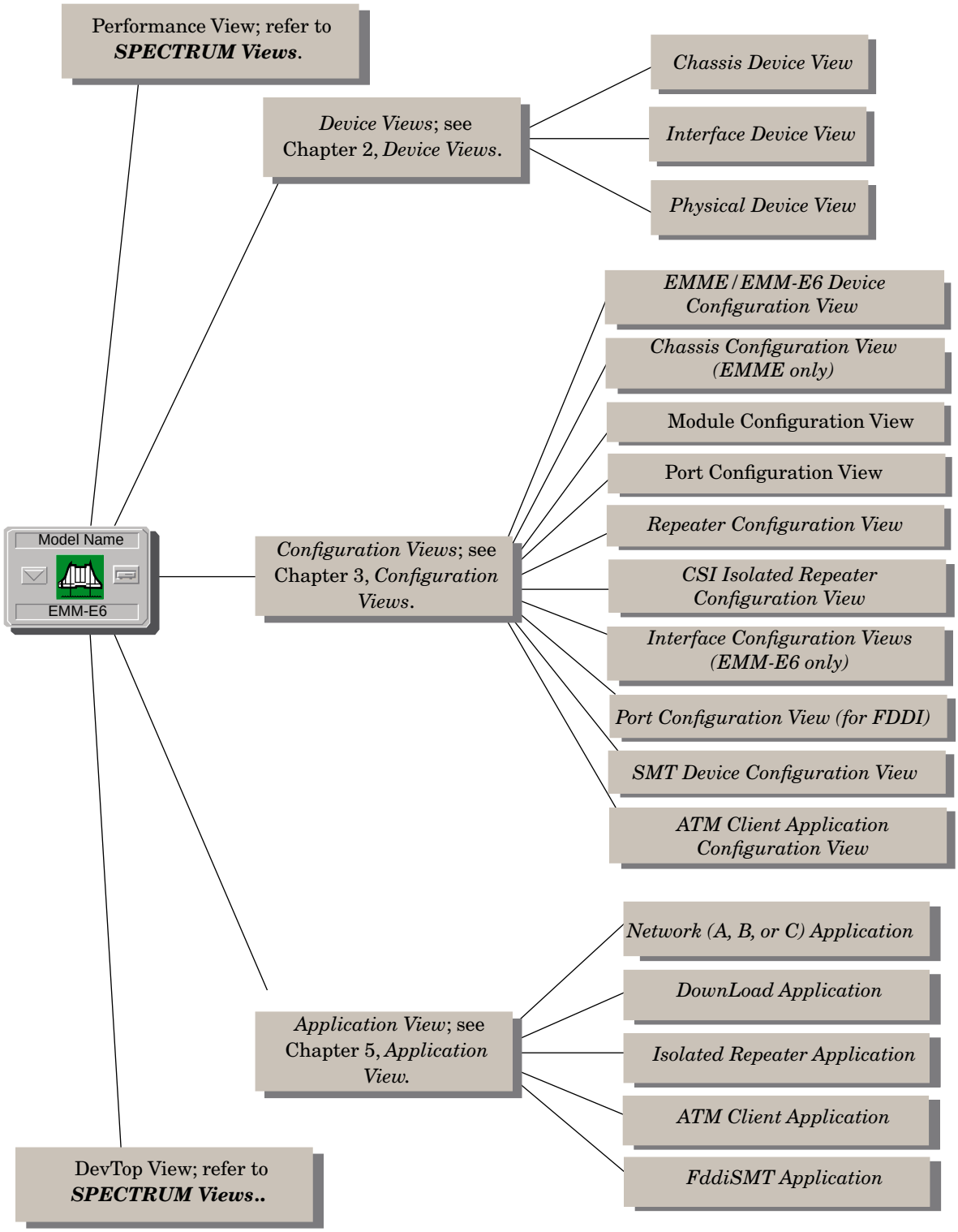
**Figure 1-4. Accessing Device-Specific Subviews**




# SPECTRUM Views Roadmap

Figure 1-5 shows a “roadmap” of the SPECTRUM views for this device. These views are accessible from double-click zones (Figure 1-2) and Icon Subviews menus (Figure 1-3 and Figure 1-4).

**Figure 1-5. SPECTRUM Views Roadmap**


Performance View; refer to ***SPECTRUM Views***.
*Device Views*; see Chapter 2, *Device Views*.
*Chassis Device View*
*Interface Device View*
*Physical Device View*
*EMME/EMM-E6 Device Configuration View*
*Chassis Configuration View (EMME only)*
Module Configuration View
Port Configuration View
*Repeater Configuration View*
*CSI Isolated Repeater Configuration View*
*Interface Configuration Views (EMM-E6 only)*
*Port Configuration View (for FDDI)*
*SMT Device Configuration View*
*ATM Client Application Configuration View*
Model Name
EMM-E6
*Configuration Views*; see Chapter 3, *Configuration Views*.
*Application View*; see Chapter 5, *Application View*.
*Network (A, B, or C) Application*
*DownLoad Application*
*Isolated Repeater Application*
*ATM Client Application*
*FddiSMT Application*
DevTop View; refer to ***SPECTRUM Views..***

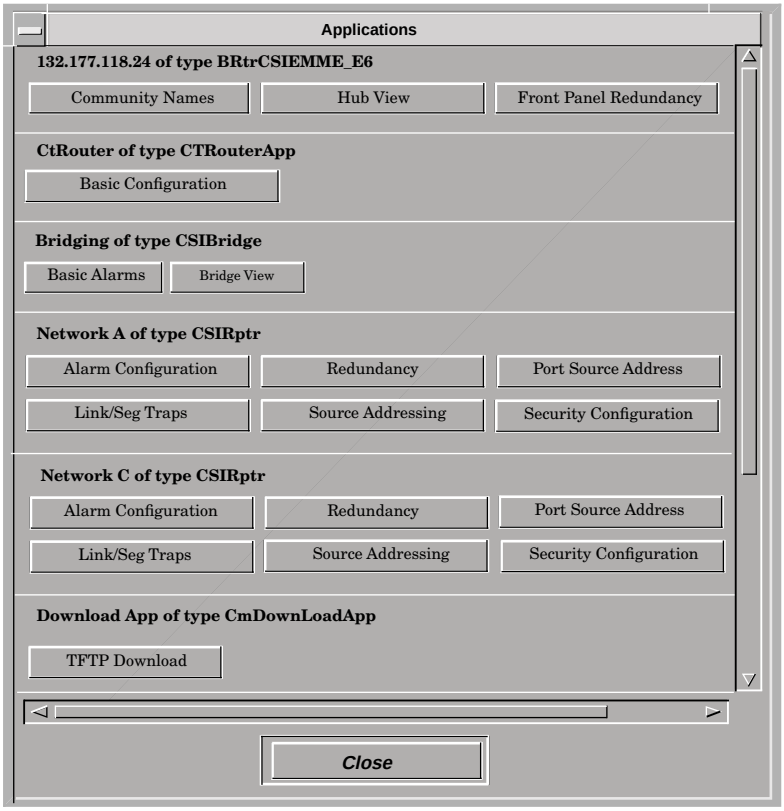
# SPMA Support

SPECTRUM also supports SPECTRUM Portable Management Application (SPMA) functionality for the EMME/EMM-E6. To open the SPMA Applications view from any SPECTRUM view, do the following:

1. Highlight the Device icon.
2. From the View menu, select **Icon Subviews -> Utilities -> Applications...**.

Figure 1-6 shows an example of an SPMA Applications view.

**Figure 1-6. SPMA Applications View**



The buttons within the SPMA Applications view provide access to SPMA-specific views and dialog boxes. The Application view for a particular device may include different buttons depending upon the applications available, the BRIMs installed, and the configuration of your device. Refer to the following documentation for information on the SPMA views accessible from the Applications view:

***SPECTRUM Portable Management Application for the EMME User's Guide***

***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***

***SPECTRUM Portable Management Application Tools Guide***

# Chapter 2

# Device Views

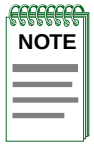
## What Is in This Chapter

This chapter describes the following Device views available for the EMME/EMM-E6:

- Chassis Device view
- Interface Device view
- Physical Device view

See Chapter 1, *Introduction,* for information on *Accessing SPECTRUM Views from the Device Icon* and *Accessing Device-Specific Subviews*

Each Device view provides a representation of the EMME/EMM-E6's configuration and menu access to the views that monitor and control the EMME/EMM-E6, its modules, and the module's ports. If the configuration changes (e.g., a board is pulled from or added to the MMAC), the corresponding change(s) is displayed.




*Only the port or application status is updated every polling cycle. Board or application icons change when a model reconfiguration occurs.*

# Chassis Device View

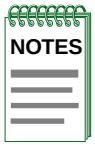
This view is a logical representation of the MMAC FNB chassis and the modules it contains. The Chassis Device view provides both menu access and double-click zone access to the views that monitor the modules, interfaces or ports.

Figure 2-1 shows an example of the Chassis Device view including an EMME installed in slot number one and Management Interface modules (MIMs) it manages. MIMs are connected to the EMME via the Chassis FNB Backplane.

**Figure 2-1. Chassis Device View**

# EMME/EMM-E6 Module Icon

This icon is a logical representation of the physical module, its location in the MMAC FNB chassis and its front and back panel interfaces or ports.
Figure 2-2 shows an example of an EMME module and Figure 2-3 shows an example of an EMM-E6 module as seen in the Chassis Device View.




*The callouts in the illustrations that follow identify the labels and, when applicable, the views to which they provide double-click access. Example: Slot Number/Notes View - displays the slot number and provides double-click access to the Notes view.*

*The menus displayed in these illustrations are the icon subviews menus for the corresponding labels or the Chassis Module icon.*

**Figure 2-2. EMME Module Icon**

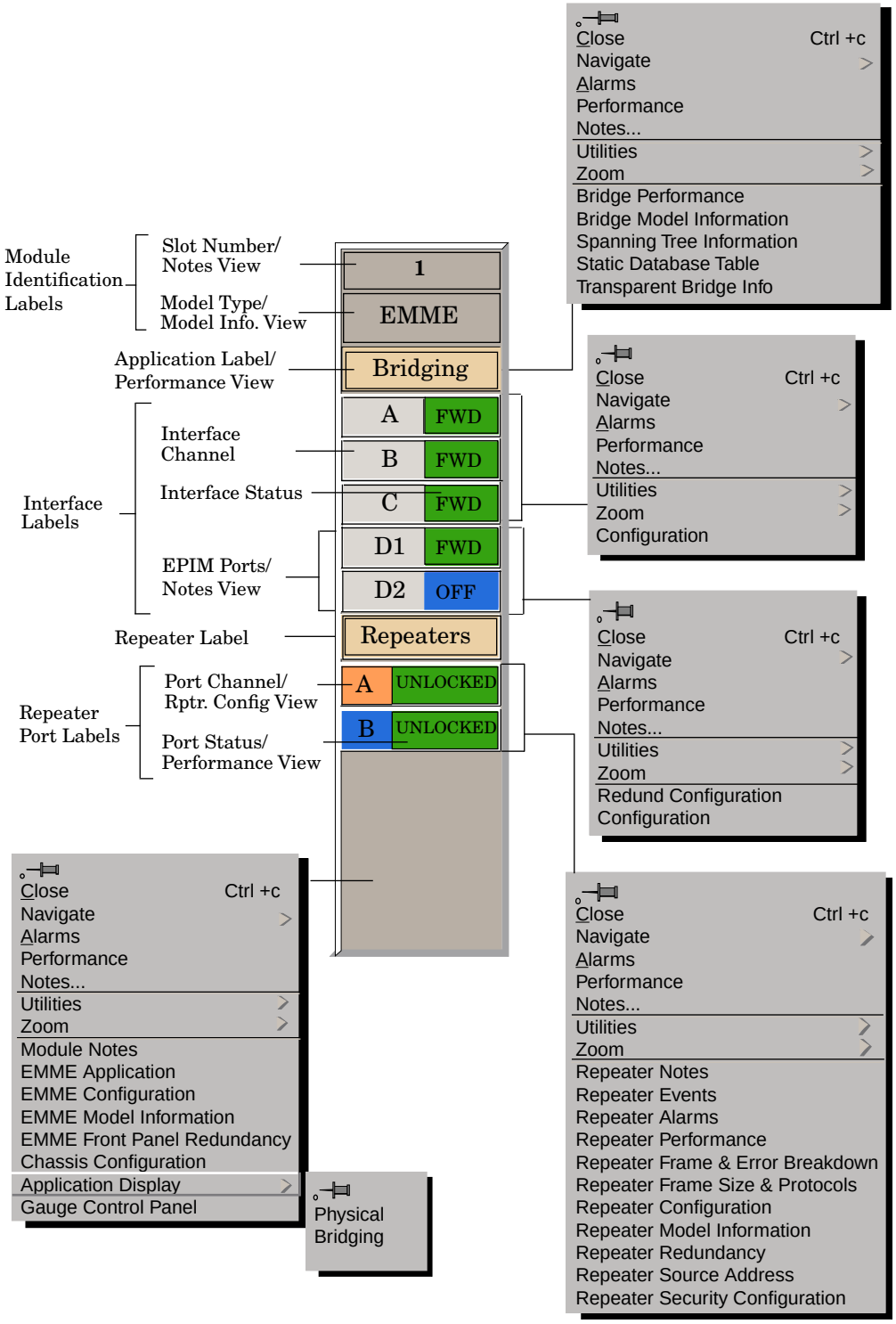
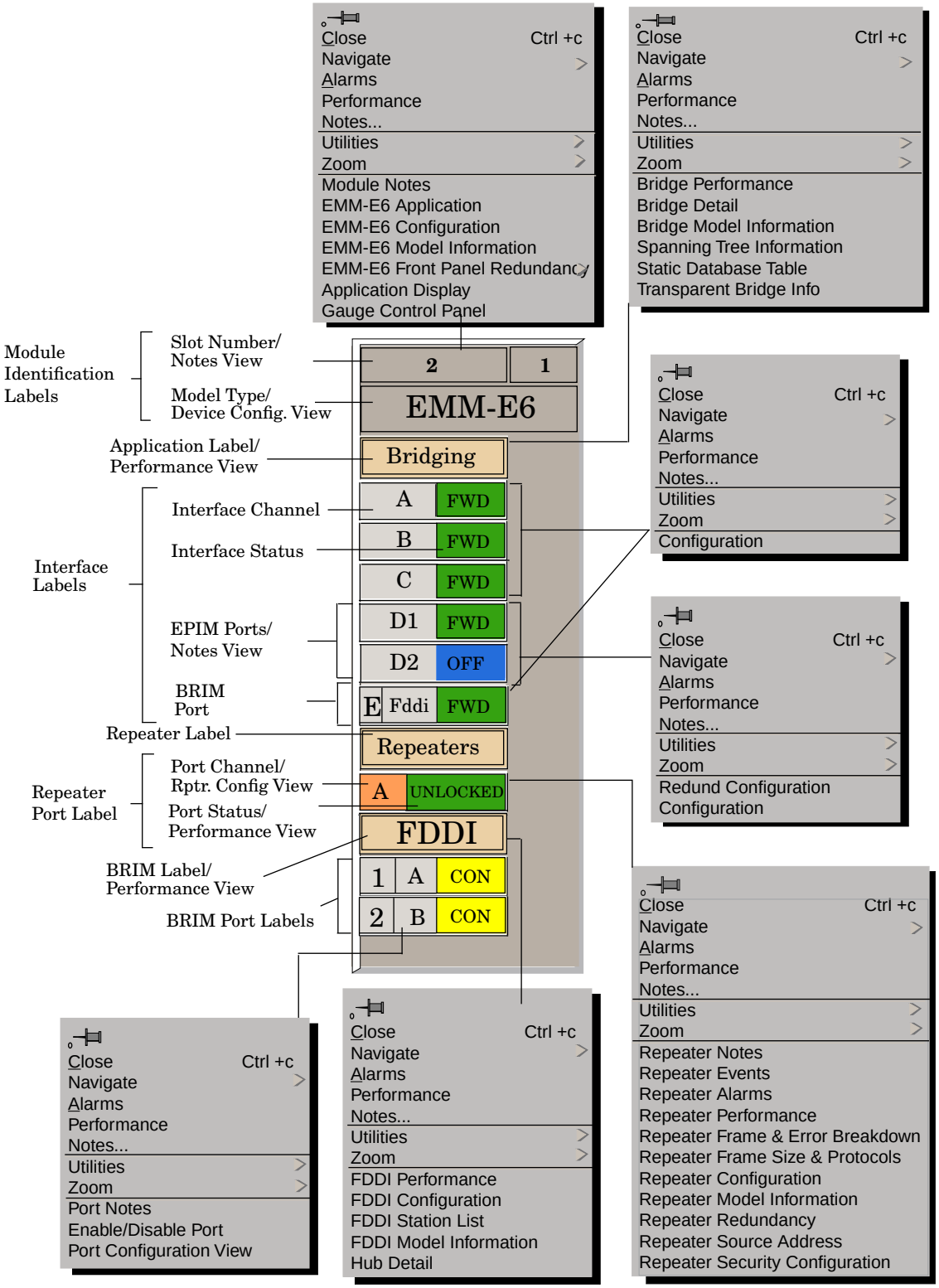


**Figure 2-3. EMM-E6 Module Icon**



## EMME/EMM-E6 Module Identification Labels

These labels provide the following information (refer to Figure 2-1 and Figure 2-3):

**Slot Number**
Displays the number of the MMAC FNB slot that the module is connected to. Double-click this area to open the Notes view described in ***SPECTRUM Views***.

**Model Type**
Identifies the type of module in this MMAC FNB slot (e.g., EMM-E6). Double-click this area of the EMME to open the Model Information view. Double-click this area of the EMM-E6 to open the *EMME / EMM-E6 Device Configuration View* described in Chapter 3, *Configuration Views.*

## EMME/EMM-E6 Chassis Module Icon Subviews Menu

Table 2-1 lists each of the device-specific Icon Subviews menu selections available for EMME/EMM-E6. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-1. EMME/EMM-E6 Module Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Module Notes | Opens the Notes view described in ***SPECTRUM Views***. |
| EMME/EMM-E6 Application | Opens the *Device Application View* described in Chapter 5, *Application View.* |
| EMME/EMM-E6 Configuration | Opens the *EMME / EMM-E6 Device Configuration View* described in Chapter 3, *Configuration Views*. |
| EMME/EMM-E6 Model Information | Opens the EMME/EMM-E6 Model Information view described in the ***SPECTRUM Views***. |
| EMME/EMM-E6 Front Panel Redundancy | Opens the EMME/EMM-E6 Front Panel Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Chassis Configuration (EMME only) | Opens the *Chassis Configuration View (EMME only)* described in Chapter 3, *Configuration Views*. |
| Application Display | Opens the Application Display submenu, allowing you to chose the application to be displayed e.g., Physical (MIB-II) or Bridging. |
| Gauge Control Panel | Opens the *Gauge Control Panel* described in this chapter. |

## Application Label

Application label provides access to the Icon Subviews menu for the application displayed (refer to Figure 2-2 and Figure 2-3). Double-click the Application label to open the Performance view described in ***SPECTRUM Views***. The application selected determines the information displayed and the menu selections available. To select the application, highlight the Chassis Logical Module and select **View** -> **Icon Subviews** -> **Application Display**. The default application for this view is Bridging.

Table 2-2 describes the Bridging Application Icon Subviews menu selections. See Chapter 1, *Introduction,* for information on *Accessing Device-Specific Subviews*. There are no specific Icon Subviews menu selections for the Physical Application.

**Table 2-2. Bridge Menu Selections**

| Menu Selection | Description |
|---|---|
| Bridge Performance | Opens the Performance view described in SPECTRUM Views. |
| Bridge Detail (for EMM-E6 only) | Opens the Detail view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications.*** |
| Bridge Model Information | Opens the Model Information view described in ***SPECTRUM Views***. |
| Spanning Tree Information | Opens the Spanning Tree Information view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications.*** |
| Static Database Table | Opens the Static Database Table view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications***. |
| Transparent Bridge Info | Opens the Transparent Bridge Information view, with Forwarding Database and Port Tables described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications***. |

## Interface Labels

These labels represent up to six Ethernet Bridging Channels, managed by the EMME/EMM-E6, that are located on the front panel of the device as well as within the hub. The Interface labels provide access to the Icon Subviews menu for the interface and display two information labels: an Interface Channel label and an Interface Status label.

The menu selection for an Interface Label is **Configuration**. It opens the Configuration dialog box, which allows you to enable or disable bridging for the selected port. See Chapter 1, *Introduction,* for information on *Accessing Device-Specific Subviews*.

## Interface Channel

This label identifies one of six channels connected to the EMME/EMM-E6 (refer to Figure 2-2 and Figure 2-3). The A, B, C labels refer to three Ethernet channels in the MMAC hub, the D1 and D2 labels refer to the redundant EPIM connection and are described separately in this section. The “E” label refers to the connection to one of the BRIMs located on the front panel of the device. In addition, the Interface Channel label for channel “E” provides information on what kind of BRIM (Ethernet, FDDI, ATM) is attached to this device.

## Interface Status

This label indicates the port activity status. Table 2-3 and Table 2-4 list the possible states relative to the application selected. Refer to the *Application Label,* described previously in this chapter, for information on selecting the application to be displayed.

**Table 2-3. Interface Status for the Bridging Application**

| Color | Status | Description |
|---|---|---|
| Green | FWD | Bridge port is forwarding network traffic. |
| Blue | DIS | Port is disabled. |
| Yellow | LSTN | Bridge is in the listening mode. |
| Yellow | LRN | Bridge is in the learning mode |
| Yellow | STBY | Bridge port is in the standby mode. |
| Yellow | BLK | Bridge port is in the blocking mode. |
| Red | BRKN | Bridge port is broken. |
| Blue | UNK | The status is unknown. |

**Table 2-4. Interface Status for the Physical or MIB II Application**

| Color | Status | Description |
|---|---|---|
| Green | ON | Port is operational. |
| Blue | OFF | Port is disabled. |
| Yellow | TST | Port is in the test mode. |

## EPIM Ports

These labels represent the connection to the EPIM ports located on the front panel of the device, which direct traffic to one of two external Ethernet Port Interface Modules (EPIMs). One D port is operational (**FWD**) while the other D port is redundant (**STBY**) or inactive (**OFF**). See Table 2-3 for interface status label descriptions.

Table 2-5 lists the Subviews menu selections available from this label. See Chapter 1, *Introduction,* for information on *Accessing Device-Specific Subviews*.

**Table 2-5. AUI Port Subviews Menu**

| Menu Selection | Description |
|---|---|
| Redund Configuration | Opens the Front Panel Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Configuration | Opens the Configuration dialog box, which allows you to enable or disable bridging for the selected port. |

## BRIM Port

This label represent the connection to one of two BRIM ports located on the front panel of the EMME/EMM-E6, which direct traffic to the optional external Bridge/Router Interface Module (BRIM). A second interface provided by the other BRIM port (forming channel F) will be implemented in the future.

## Repeater Label

This label represents the Repeater application that allows for transfer of information between the repeaters in the MMAC chassis and EMME/EMM-E6. The repeater label provides access to the Icon Subviews menu for this application. Table 2-6 lists specific Subviews menu selections for the Repeater Label. See Chapter 1, *Introduction,* for information on *Accessing Device-Specific Subviews*.

**Table 2-6. Repeater Menu Selections**

| Menu Selection | Description |
|---|---|
| Repeater Notes | Opens the Notes view described in ***SPECTRUM Views***. |
| Repeater Events | Opens the Event Log window described in ***SPECTRUM Views*.** |
| Repeater Alarms | Opens the Alarm Manager view described in ***SPECTRUM Views***. |
| Repeater Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Repeater Frame & Error Breakdown | Opens the *Repeater Frame & Error Breakdown View* described later in this chapter. |
| Repeater Frame Size & Protocols | Opens the *Repeater Frame Size & Protocols View* described later in this chapter. |
| Repeater Configuration | Opens the *Repeater Configuration View* described in Chapter 3, *Configuration Views*. |
| Repeater Model Information | Opens the Repeater Model Information view described in ***SPECTRUM Views***. |
| Repeater Redundancy | Opens the Repeater Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Repeater Source Address | Opens the Repeater Source Address view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Repeater Security Configuration | Opens the Repeater Security view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |

## Repeater Frame & Error Breakdown View

This view displays statistics for a selected port. To access this view do the following:

1. Within the Chassis Device view, highlight the Repeater label.
2. From the Icon Subviews menu, select **Repeater Frame & Error Breakdown**.

This view is divided into two areas which provide the following separate performance information:

- Frame Breakdown
- Error Breakdown

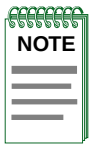
Each area includes the pie chart providing a visual representation of the numerical statistics. In addition, the Repeater Frame and Error Breakdown view supplies the following presentation modes, affecting the way data is displayed in this view:

**Total**
Allows you to display the current statistical information for all items contributing to the total value.

**Delta**
Allows you to display the difference between the previously polled values and the current value of every item contributing to the total

**Accum**
Allows you to view the accumulated statistical information for all items since the Accum button was last selected.

**Clear**
Select this button to restart the counter. The values will continue to accumulate until clear is selected or another presentation mode is chosen.




*Selecting **Total**, **Delta** or **Accum** affects the numerical, as well as graphical representation of every item contributing to the total.*

**Pie Chart**
When **Total** is selected, the pie chart displays the current statistical information for all items contributing to the total value. When **Delta** is selected, the pie graph is used to compare the difference between the previously polled value and the current value of all items. When **Accum** is chosen, the pie chart provides the statistics for all items accumulated since the Accum button was selected.

**Frame Breakdown**
Displays the breakdown of all the frames transmitted and received through the selected port. The following categories are displayed first as numbers followed by percentages:

- Good Frames
- Collisions
- Errors
- Total

For more information on the individual error types refer to ***How to Manage Your Network with SPECTRUM***.

**Error Breakdown**
Displays the number of port traffic errors in an error per second format. The following types of errors are displayed first as numbers followed by percentages:

- Alignment
- CRC
- Runts
- Giants
- OOW Colls
- Total

For more information on the individual error types refer to ***How to Manage Your Network with SPECTRUM***.

## Repeater Frame Size & Protocols View

This view displays statistics for a selected port. To access this view do the following:

1. Within the Chassis Device view, highlight the Repeater label.
2. From the Icon Subviews menu, select **Repeater Frame & Protocols**.

This view is divided into two areas which provide the following separate performance information:

- Frame Size
- Protocols

Each area includes the pie chart providing a visual representation of the numerical statistics. In addition, the Repeater Frame Size and Protocols view provides the following presentation modes, affecting the way data is displayed in this view:

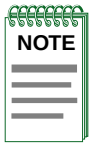
**Total**
Allows you to display the current statistical information for all items contributing to the total value.

**Delta**
Allows you to display the difference between the previously polled value and the current value of every item contributing to the total.

**Accum**
Allows you to view the accumulated statistical information for all items since the Accum button was last selected.

**Clear**

Select this button to restart the counter. The values for all items will continue to accumulate until clear is selected or another presentation mode is chosen.




*Selecting **Total**, **Delta**, or **Accum** affects the numerical, as well as graphical representation of every item contributing to the total.*

**Pie Chart**
When **Total** is selected, the pie chart displays the current statistical information for all items contributing to the total value. When **Delta** is selected, the pie graph is used to compare the difference between the previously polled value and the current value of all items. When **Accum** is chosen, the pie chart provides the accumulated statistics for all items accumulated since the Accum button was selected.

**Frame Size**
Displays a number signifying how many frames from a selected port are of a certain size. This number is displayed as a numerical value and as percentage of the total frames transmitted and received. The view provides the following frame size categories:

- Runts
- 64 -127 Bytes
- 128 - 255 Bytes
- 256 - 511 Bytes
- 512 - 1023 Bytes
- Giants

For more information on the individual error types refer to ***How to Manage Your Network with SPECTRUM***.

**Protocols**
Display a number of particular protocol types generated for a selected port. The following protocols are displayed first as numbers followed by percentages:

- IP
- OSI
- DECnet
- XNS
- Novel
- AppleTalk
- Banyan
- Ctron
- Other

## Repeater Port Label

This label represents the bridging channel connecting the EMME/EMM-E6 to a MIM located in the hub.

## Repeater Port Channel

This label identifies one of the bridging channels this repeater is connected to (refer to Figure 2-2 and Figure 2-3). Letters “A”, “B”, and “C” signify the three internal bridging channels. The background for the Repeater Port Type label is color coded to associate the port with its currently selected channel. Table 2-7 lists the colors assigned to the repeater ports.

**Table 2-7. Repeater Port Channel Label & Background Colors**

| Repeater Channel | Background Color |
|---|---|
| Channel A | Light orange |
| Channel B | Light blue |
| Channel C | Light violet |

Double-click this label to access the *Repeater Configuration View* described in Chapter 3, *Configuration Views*.

### Repeater Port Status

This label indicates the port activity status. Double-click the Repeater Port Status label to access the Performance view described in ***SPECTRUM Views***.

## BRIM Label (exclusive to EMM-E6)

This label represents the interface to which EMM-E6 provides bridging or routing capabilities through the additional BRIM connections on the front panel of the device. Depending on the BRIMs connected to the device, the EMM-E6 can supply one additional interface (channel "E") configured to provide bridging or routing to Ethernet, FDDI, or ATM networks. An EMM-E6 equipped with an Ethernet BRIM will not display a separate Ethernet label.

### FDDI Label

This label represents the FDDI application and signifies that the EMM-E6 is configured to provide additional bridging or Feeder Node Routing on FDDI. The FDDI label provides access to the FDDI application-specific Icon Subviews menu. Table 2-8 describes all menu selections accessible from this label. See chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-8. FDDI Label Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| FDDI Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| FDDI Configuration | Opens the *SMT Device Configuration View* described in Chapter 3, *Configuration Views*. |
| FDDI Station List | Opens the FDDI Station view described in ***MIB II Applications, Bridging Applications, andMiscellaneous Applications***. |
| FDDI Model Information | Opens the SMT Model Information view described in ***SPECTRUM Views***. |
| Hub Detail | Opens the FddiSMT Detail view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications.*** |

Double-click this label to open the Performance view described in ***SPECTRUM Views***.

## ATM Label

This label represents the ATM application and signifies that the EMM-E6 is configured to provide additional bridging or Feeder Node Routing on ATM. the ATM label provides access to the ATM Application specific Icon Subviews menu. Table 2-9 describes all menu selections accessible from this label. See chapter 1, *Introduction*, for information on *Accessing Icon-Specific Subviews*.

**Table 2-9. ATM Label Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Configuration | Opens the *ATM Client Application Configuration View* described in Chapter 3, *Configuration Views*. |
| VCL Table | Opens the *ATM Client Application Virtual Channel Link View* described in Chapter 5, *Application View.* |
| Model Information | Opens the ATM Application Model Information View described in ***SPECTRUM Views***. |

Double-click this label to open the Performance view described in ***SPECTRUM Views*.**

## BRIM Port Label

This label identifies the port on the front panel of the BRIM. BRIMs with a single front panel port do not display BRIM Port labels (e.g., ATM) therefore their BRIM Channel represents the entire BRIM connection (refer to Figure 2-3).

The BRIM Port label provides access to the Icon Subviews Menu described in Table 2-10. See chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-10. BRIM Port Label Subviews Menu**

| Menu Selection | Description |
|---|---|
| Port Notes | Opens the Notes view described in ***SPECTRUM Views***. |
| Enable/Disable Port | Opens a dialog box which allows you to enable or disable a selected port. |
| Port Configuration View | Opens the Port Configuration view described in Chapter 3, *Configuration Views*. |

## BRIM Port Type Label

This label consists of two fields: the number field and the letter field. The number field displays the number assigned to this BRIM port. The letter field displays the type of this port.

Double-click the number field of the BRIM Port Type label to access the Notes view described in ***SPECTRUM Views***.

## BRIM Port Status Label

This label indicates the port activity status. All possible states and their color definitions are described in Table 2-11.

**Table 2-11. BRIM Port Status Descriptions**

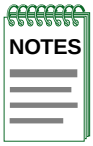
| Color | State | Description |
|---|---|---|
| Green | ACT | active |
| Blue | DIS | disabled |
| Yellow | CON | connecting |
| Red | SBY | standby |

# MIM Icon

This icon represents a Media Interface Module (MIM). There are two basic types of MIMs that can be managed by the EMME/EMM-E6: Repeater MIMs (RMIMs) and non-repeater MIMs.

The EMME/EMM-E6 manages the RMIMs located in the MMAC chassis through Ethernet channels B, and C. RMIMs can repeat packets autonomously without channeling them through the EMME/EMM-E6. The members of the RMIM family designed to work with the EMME/EMM-E6 are: FORMIM, CXRMIM, TPRMIM, and TPXMIM. Figure 2-4 shows an example of a Repeater MIM icon.

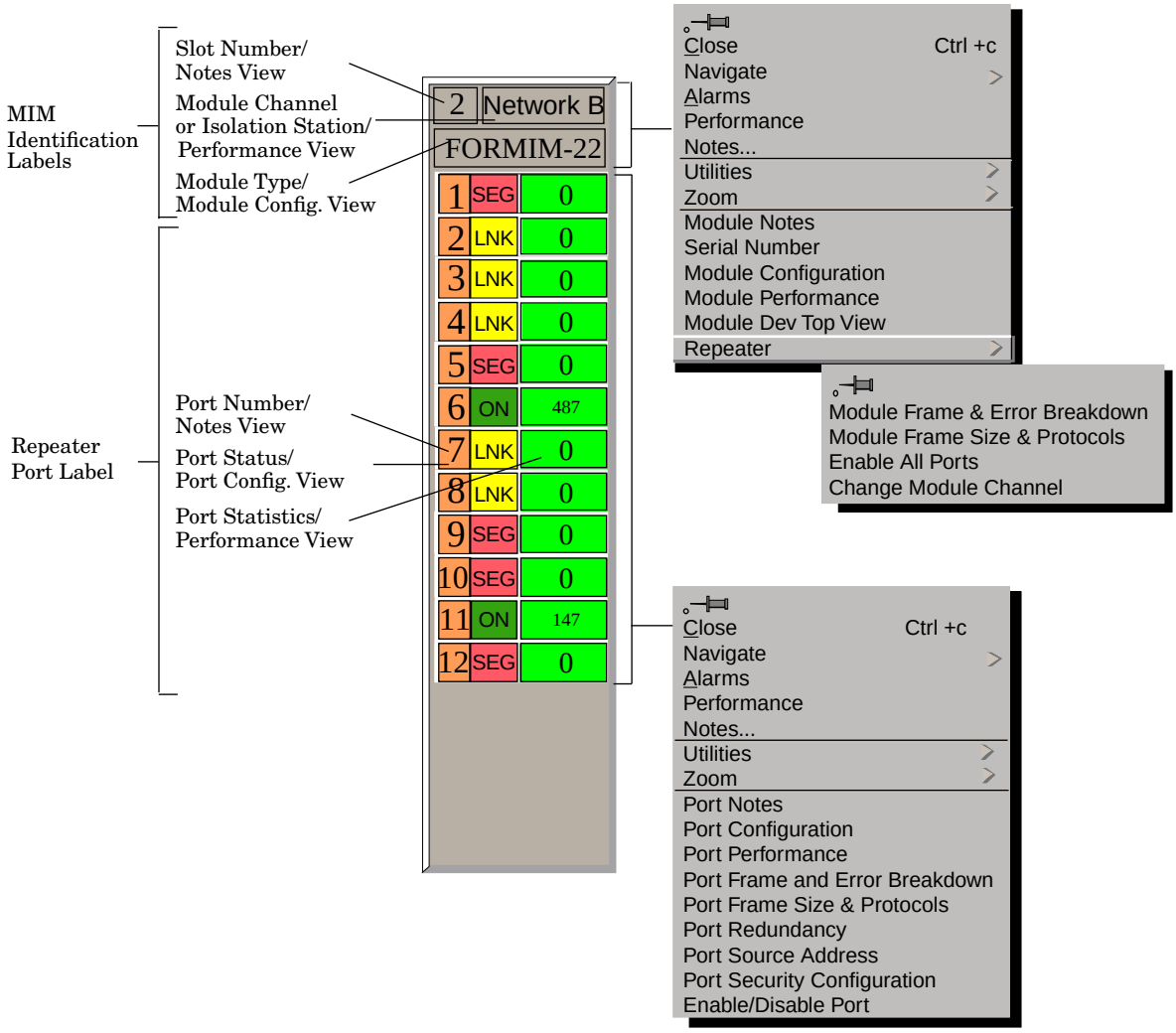
The EMME/EMME-6 uses channel A on the MMAC backplane to transmit and receive data from non-repeater MIMs (i.e., TRMIMs, FOMIMs, THN-MIMs). The EMME/EMM-E6 provides repeater functionality for these MIMs.




*The callouts in the illustration below identify the labels and, when applicable, the view to which they provides double-click access. Example: Slot Number/Notes View - displays the slot number and provides double-click access to the Notes view.*

*The menus displayed in these illustrations are the icon subviews menus for the corresponding labels or the Chassis Module icon.*

**Figure 2-4. MIM Icon**




## MIM Identification Labels

These labels provide the following information (refer to Figure 2-4):

**Slot Number**
Displays the number of the MMAC FNB slot that the module is connected to. Double-click this area to open the Notes view described in ***SPECTRUM Views***.

**Module Channel or Isolation Station**
Displays the network/channel that the module is connected to. If the module is in the stand-alone mode, "StandAlone" is displayed. If more than one channel is in use by the module, "StandAloneX" or "NetworkX" is displayed. Double-click this area to access the Performance view described in ***SPECTRUM Views***.

**Module Type**
Displays the type of module in this MMAC FNB slot (e.g., FOM-22). Double-click this area to access the Module Configuration view described in Chapter 3, *Configuration Views*.

## MIM Icon Subviews Menu

Table 2-12 describes each of the module-specific Icon Subviews menu selections available for the Repeater module. Table 2-13 describes a submenu accessible by clicking the Repeater option of the Icon Subviews menu. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-12. MIM Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Module Notes | Opens the Notes view described in ***SPECTRUM Views***. |
| Serial Number | Opens the dialog box allowing you to enter or alter the serial number for the selected module. |
| Module Configuration | Opens the Module Configuration view described in Chapter 3, *Configuration Views*. |
| Module Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Module DevTop View | Opens the Device Topology view described in ***SPECTRUM Views***. |
| Repeater | Opens a submenu described in Table 2-13. |

**Table 2-13. MIM Module Icon Subviews (Repeater option)**

| Menu Selection | Description |
|---|---|
| Module Frame & Error Breakdown | Opens the *Repeater Frame & Error Breakdown View* described earlier in this chapter. |
| Module Frame Size & Protocols | Opens the *Repeater Frame Size & Protocols View* described earlier in this chapter. |
| Enable All Ports | Opens a dialog box which allows you to enable or disable all ports on a selected module. |
| Change Module Channel (RMIM only) | Opens the *Change Module Channel View (RMIMs only)* described later in this chapter. |

## Change Module Channel View (RMIMs only)

This view allows you to change the FNB channel used by a port to communicate with the EMME/EMM-E6. It also allows you to reconfigure the module to a stand-alone mode if it provides its own repeater functionality. To access this view do the following:

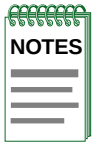
1. Within the Chassis Device view, highlight the Repeater MIM.
2. From the Icon Subviews menu, select **Repeater -> Change Module Channel**.

When configured to operate on channels B or C, the Repeater MIM provides its own repeating; when operating on channel A, its ports depend on the EMME/EMM-E6 for repeater functionality. Change Module Channel view provides the following information and fields:

**Module Number**
Displays the slot number where the selected RMIM is located. The RMIM located in this slot will be the only one affected by the configuration changes.

**Module Connection**
Allows you to chose the appropriate backplane channel or mode. The possible selections are: Channel B, Channel C, Stand_Alone, and Channel_X.

The Stand_Alone option can be applied to all ports configured to use Channels B or C. Any ports that are configured to operate on Channel A cannot be switched to the Stand_Alone mode. For more information, see *Creating an Isolated Repeater* in Chapter 5, *Application View.*




*Board-level settings will override the any individual port-level settings.*

*Refer to Release Notes that were shipped with your EMME/EMM-E6 firmware for more information about the implication of operating your TPXMIM in a Stand_Alone mode.*

## Repeater Port Labels

These labels represent repeaters located on the front panel of the RMIM which supply outside chassis network connectivity.

Repeater Port labels provide access to the port-specific Icon Subviews Menu described in Table 2-14. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-14. Repeater Port Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Port Notes | Opens the Notes view described in ***SPECTRUM Views*.** |
| Port Configuration | Opens the Port Configuration view described in Chapter 3, *Configuration Views*. |
| Port Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Port Frame & Error Breakdown | Opens the Port Frame & Error Breakdown view. For description of fields in this view, refer to the *Repeater Frame & Error Breakdown View* described earlier in this chapter. |
| Port Frame Size & Protocols | Opens the Port Frame Size & Protocols view. For description of fields in this view, refer to the *Repeater Frame Size & Protocols View* described earlier in this chapter. |
| Port Redundancy | Opens the Repeater Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Port Source Address | Opens the Port Source Address view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Port Security Configuration | Opens the port Security Configuration view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Enable/Disable Port | Opens a dialog box which allows you to enable or disable a selected port. |

## Port Number

Identifies the port's location within the module. The background for this label is color coded to associate the port with its currently selected channel. Double-click this label to open the Notes view described in ***SPECTRUM Views***.

## Port Status

Describes the port activity status.

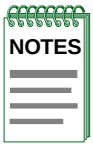
## Port Statistics

Displays the number of frames (packets) transmitted or received by this port.

# TPXMIM

The EMME/ EMM-E6 also supports Cabletron's family of Twisted Pair Switching Media Interface Modules (TPXMIMs). The TPXMIM-20, -22, -33 and -34 are a series of port assignment modules designed specifically for Cabletron's MMAC FNB hubs equipped with the EMME/EMM-E6. TPXMIM permits the entire board (bank switching) or each individual port (the port assignment) to be assigned to any of the three Ethernet channels A, B, and C on the MMAC FNB backplane. This way the unnecessary traffic across the bridge can be eliminated. The TPXMIM gives you an option of reassigning ports to different channels right at the management station without having to move the cable.

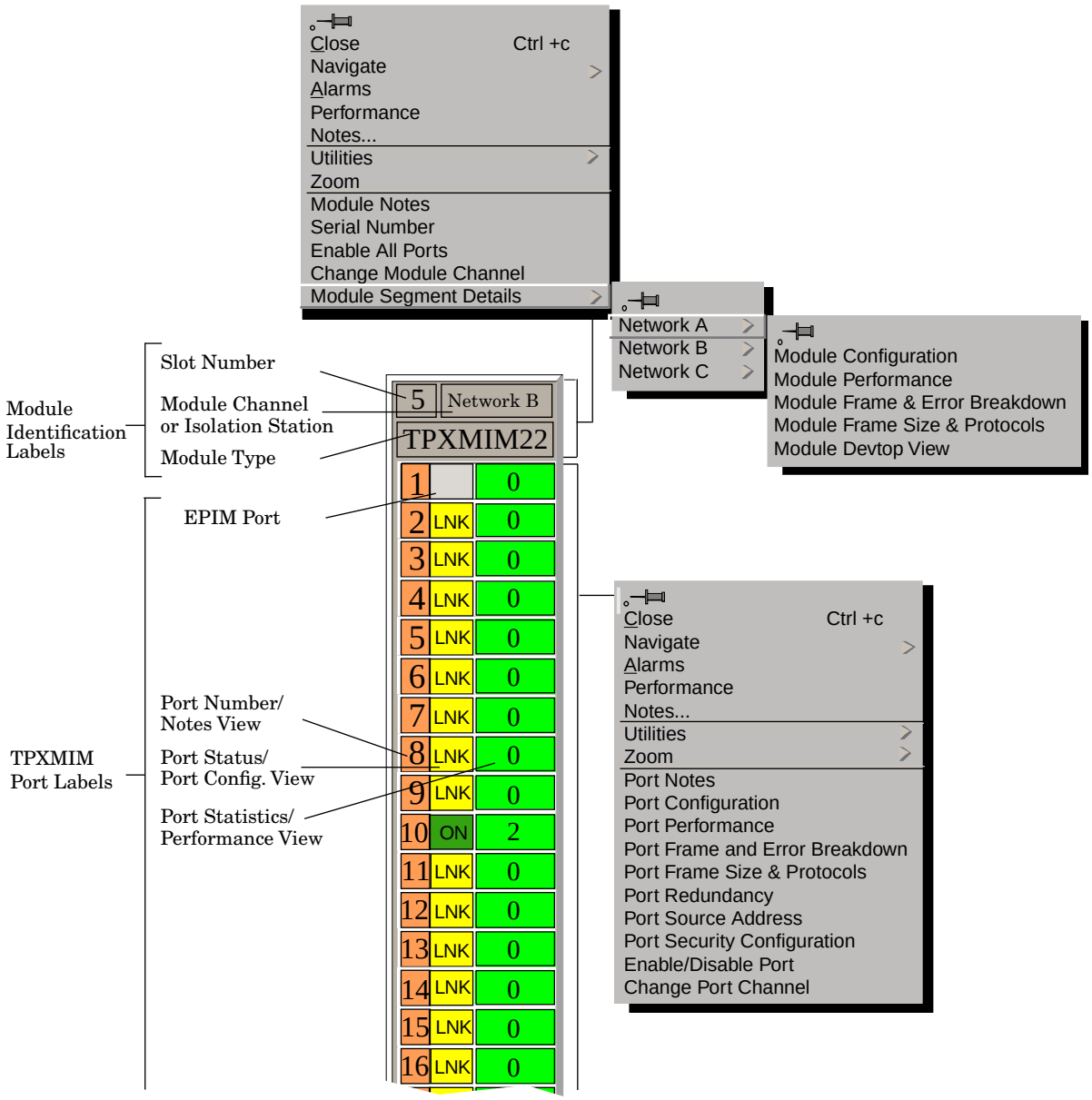
Figure 2-5 displays the TPXMIM icon as seen in the Chassis Device View.




*The callouts in the illustration below identify the label and, when applicable, the view to which they provide double-click access. Example: Port Number/Notes View - displays the sport number and provides double-click access to the Notes view.*

*The menus displayed in these illustrations are the icon subviews menus for the corresponding labels or the Chassis Module icon.*

**Figure 2-5. TPXMIM Icon**



## TPXMIM Identification Labels

These labels provide the following information (refer to Figure 2-5):

**Slot Number**
Displays the number of the MMAC-FNB slot that the module is connected to. Double-click this area to open the Notes view described in ***SPECTRUM Views***.

**Module Channel or Isolation Station**
Displays the channel that the module is connected to. If the module is in the stand-alone mode, “StandAlone” is displayed. If more than one channel is in use by the module, “StandAloneX” or “NetworkX” is displayed.

**Module Type**
Displays the type of module in this MMAC FNB slot (e.g.,TXMIM 22).

## TPXMIM Icon Subviews Menu

Table 2-15 describes each of the module-specific Icon Subviews menu selections available for the TPXMIM. Table 2-16 describes the submenu accessible for each channel listed under the Module Segment Detail option. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-15. TPXMIM Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Module Notes | Opens the Notes view described in ***SPECTRUM Views***. |
| Serial Number | Opens a dialog box allowing you to enter or alter the serial number for the selected module. |
| Enable All Ports | Opens a dialog box allowing you to enable or disable all ports located on a selected module. |
| Change Module Channel (Channel B & C only) | Opens the *Change Module Channel View (RMIMs only)* described earlier in this in this chapter. |
| Module Segment Details | Allows you to access a submenu for each channel (A, B, and C) being used. Table 2-16 lists the menu selections for these channels. |

**Table 2-16. TPXMIM Icon Subviews Menu (Module Segment Details option)**

| Menu Selection | Description |
|---|---|
| Module Configuration | Opens the Module Configuration view described in Chapter 3, *Configuration Views*. |
| Module Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Module Frame & Error Breakdown | Opens the Module Frame & Error Breakdown view. For description of fields in this view refer to the *Repeater Frame & Error Breakdown View* described earlier in this chapter. |
| Module Frame Size & Protocols | Opens the Module Frame Size & Protocols view. For description of fields in this view refer to the *Repeater Frame Size & Protocols View* described earlier in this chapter. |
| Module Devtop View | Opens the Device Topology view described in ***SPECTRUM Views*.** |

## TPXMIM Port Labels

These labels represent TPXMIM ports situated on the front panel of the module. Port number 1 represents the EPIM port. If an EPIM is not installed in the device, the Port label will not display the port status. The function of repeater ports is to supply the module with connectivity to external networks. The TPXMIM port management differs from the management of the ordinary MIM ports because every TPXMIM port can be assigned to any of the three Ethernet channels on the MMAC FNB backplane.

TPXMIM Port labels provide access to the port-specific Icon Subviews menu described in Table 2-17. See Chapter 1, *Introduction*, on *Accessing Device-Specific Subviews*.

**Table 2-17. TPXMIM Port Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Port Notes | Opens the Notes view described in the ***SPECTRUM Views***. |
| Port Configuration | Opens the Port Configuration view described in Chapter 3, C*onfiguration Views*. |
| Port Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Port Frame & Error Breakdown | Opens the Port Frame & Error Breakdown view. For description of fields in this view, see the *Repeater Frame & Error Breakdown View* described earlier in this chapter. |

**Table 2-17. TPXMIM Port Icon Subviews Menu (Continued)**

| Menu Selection | Description |
|---|---|
| Port Frame Size & Protocols | Opens the Port Frame Size & Protocols view. For description of fields in this view, see the *Repeater Frame Size & Protocols View* described earlier in this chapter. |
| Port Redundancy | Opens the Repeater Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Port Source Address | Opens the Port Source Address view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Port Security Configuration | Opens the Port Security Configuration view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Enable/Disable | Opens a dialog box which allows you to enable or disable a selected port. |
| Change Port Channel | Opens the *Change Port Channel View* described later in this chapter. |

## Change Port Channel View

This view allows you to reassign the FNB channel used by a selected port to communicate within the MMAC FNB chassis. It also allows you to reconfigure a port to a stand-alone mode. To access this view do the following:

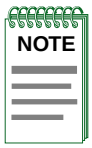
1. Within the Chassis Device view, highlight the TPXMIM icon.
2. From the Icon Subviews menu, select **Change Port Channel**.

When configured to operate on channels B or C, the TPXMIM provides its own repeating, when operating on channel A, TPXMIM ports depend on the EMME/EMM-E6 for repeater functionality. All TPXMIM ports default to channel B when first installed. Change Port Channel view provides the following fields:

**Module Number**
Displays the slot number where the TPXMIM containing a selected port is located.

**Port Number**
Displays the number of a selected port that will be affected by the configuration changes.

**Port Connection**
Allows you to chose the appropriate backplane channel from the pull-down menu. The pull-down menu includes the following selections: Channel A, Channel B, and Channel C. Individual ports cannot be placed in stand-alone mode via this menu.




*To place only selected ports in stand-alone mode, configure all other ports so that they are connected to Channel A: those ports will remain connected to Channel A when stand-alone mode is implemented, and only those ports connected to channels B or C will be put in stand-alone mode.*

### Port Number

This label identifies the port location within the module. The background for this label is color coded to associate the port with its currently selected channel. Double-click this label to open the Notes view described in ***SPECTRUM Views***.

### Port Status

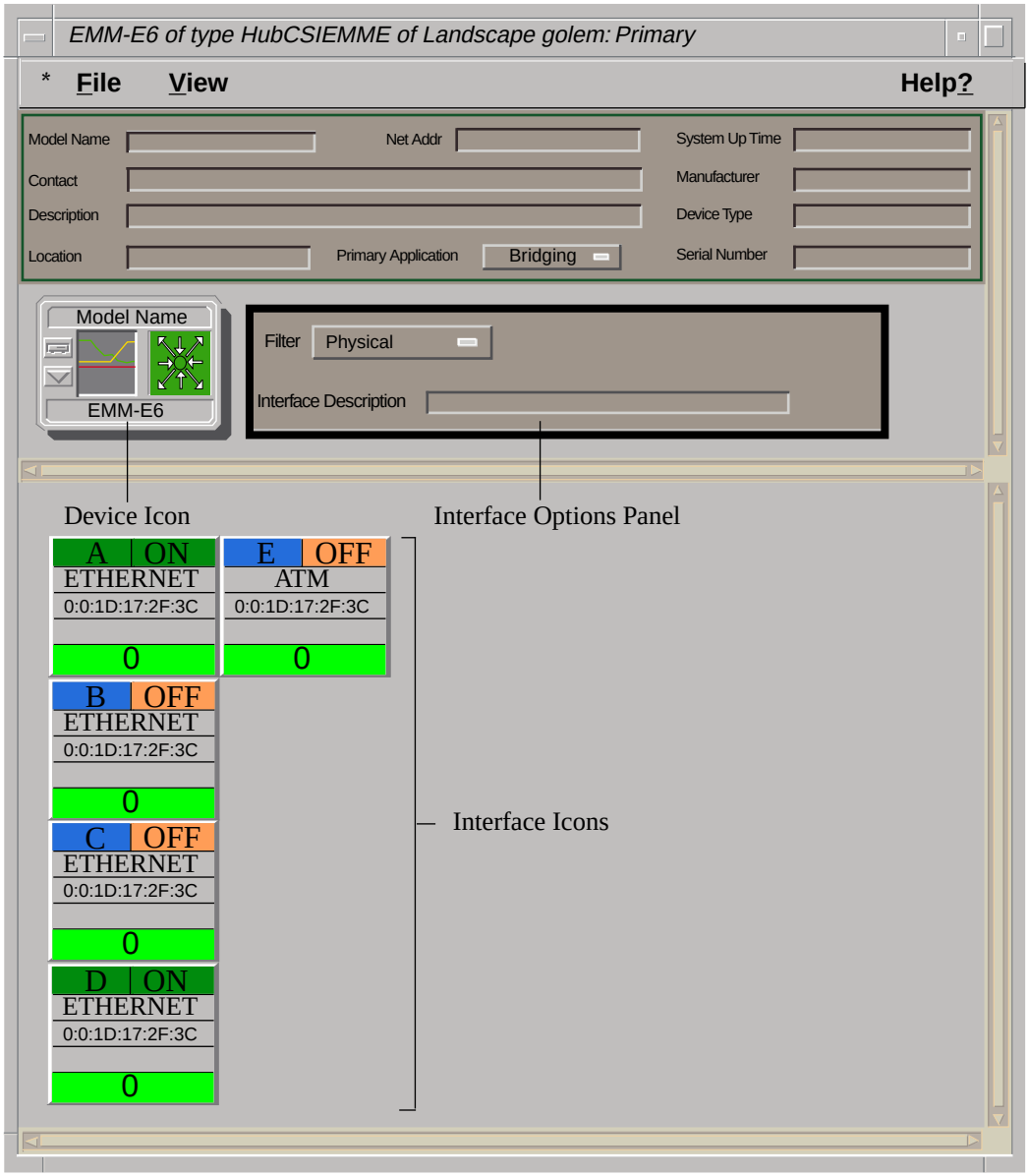
This label describes the port activity status. Double-click this label to access the Port Configuration view described in Chapter 3, *Configuration Views*.

**Port Statistics**
Displays the number of frames (packets) transmitted or received by this port. Double-click this label to access the Performance view described in ***SPECTRUM Views***.

# Interface Device View

This section describes the Interface icons and the Interface Options panel displayed in the Interface Device view. The Interface Device view provides dynamic configuration and performance information for each interface on this device. If the configuration changes, SPECTRUM modifies the Device view after the next polling cycle to reflect the new configuration. This view also provides a Device icon which allows you to monitor device operation and to access other device-specific views. Figure 2-6 provides an example of the Interface Device View.

**Figure 2-6. EMME/EMM-E6 Interface Device View**



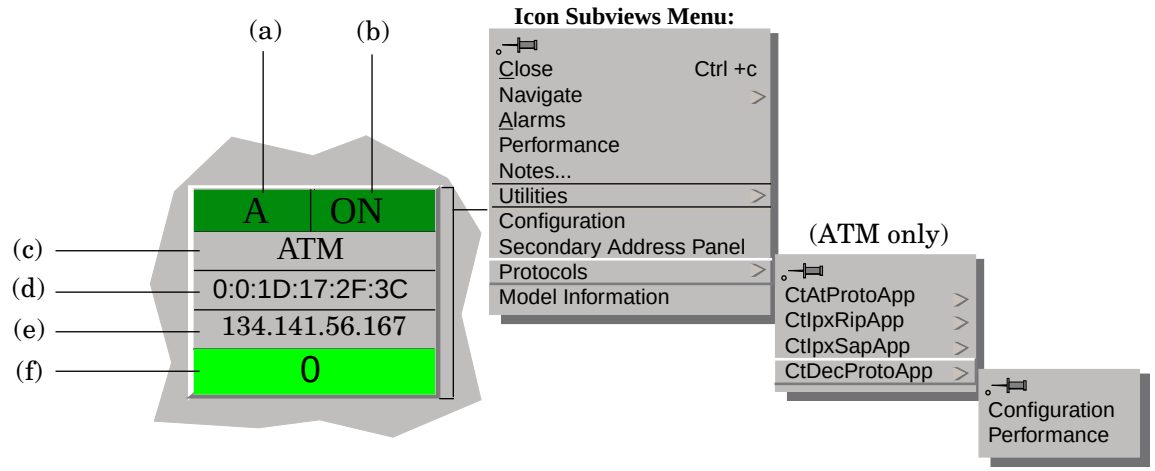
# Interface Icons

These interface icons represent the interfaces and ports of the device. The icons identify the type of interface or port and provide statistical information. Figure 2-7 shows an example of an interface icon, its Icon Subviews menu, and its labels/double-click zones.

*The callouts (a through f) in the illustration below identify the labels and the views to which they provide double-click access. Example: Administrative Status Label / Port Configuration-BRIMIfATM view displays the interface status and provides double-click access to the Port Configuration-CSIIfPort view.*

*The menu displayed in the illustration is the icon subviews menu for that interface icon.*

**Figure 2-7. Interface Icon**




a. Interface Label
b. Administrative Status Label/Port Configuration-BRIMIfATM View
c. Interface Type Label
d. MAC Address Label/CSI Interface Port Model Information View
e. Network Address Label/Secondary Address Panel
f. Gauge Label/Performance - CSIIfPort View

## Interface Icon Subviews Menu

Table 2-18 describes each of the device-specific Icon Subviews menu selections available from the Interface icon. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 2-18. Interface Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| Configuration | Opens an Interface Configuration view for the specific interface type (e.g., Ethernet, FDDI) of the selected Interface icon. These configuration views are described in Chapter 3,*Configuration Views*. |
| Secondary Address Panel | Opens the *Secondary Address Panel* described later in this chapter. |
| Protocols (ATM only) | Allows you to access protocols submenu. The ATMClientApp menu selection provides access to the *ATM Client Application Configuration View* described in Chapter 3, *Configuration Views* and the Performance view described in ***SPECTRUM Views***. For other menu selections refer to the ***Routing Services Management Module Guide*** as applicable. |
| Model Information | Opens the Model Information view described in ***SPECTRUM Views***. |

## Interface Label

This label displays the name of the interface. Letters A, B, and C represent the FNB/backplane channels. Letter D represents the front panel EPIM connection, and the letter E represents EMM-E6's BRIM interface.

## Administrative Status Label

This label displays the status of this interface. The default application for this view is Bridging. Table 2-19 and Table 2-20 list all possible states and their corresponding colors for Physical and Bridging Application. To select the application to be displayed (Physical, Bridging) click the **Filter** button in the Interface Options Panel. See the *Interface Options panel* description later on in this chapter for more information on the Filter button.

**Table 2-19. Administrative Status for the Physical or MIB II Application**

| Color | Status | Description |
|---|---|---|
| Green | ON | Port is operational. |
| Blue | OFF | Port is off. |
| Yellow | TST | Port is in the test mode. |

**Table 2-20. Administrative Status for the Bridging Application**

| Color | Status | Description |
|---|---|---|
| Green | FWD | Bridge port is forwarding. |
| Blue | DIS | Port is disabled. |
| Magenta | LST | Bridge is in the listening mode. |
| Magenta | LRN | Bridge is in the learning mode. |
| Orange | BLK | Bridge port is in the blocking mode. |
| Red | BRK | Bridge port is broken. |
| Blue | | The status is unknown. |

Double-click this label to access the configuration view specific to the interface type of the Interface icon selected. See Chapter 3, *Configuration Views*, for the description of this view.

## Interface Type Label

This label displays the type of EMME/EMM-E6 interface. Table 2-21 lists all possible interface types.

**Table 2-21. Interface Types**

| Interface Type | Description |
|---|---|
| Other | None of the following |
| Reg1822 | Regular 1822 |
| HDH1822 | HDLC Distant Host protocol |
| DDNX25 | Defense Data Network X.25 |
| rfc877X25 | RFC877 X.25 |
| Ethernet | Ethernet CSMA/CD |
| iso88023 | ISO CSMA/CD |

**Table 2-21. Interface Types (Continued)**

| Interface Type | Description |
|---|---|
| iso88024 | ISO token bus |
| iso88025 | ISO token ring |
| iso88026 | ISO man |
| starLan | StarLAN IEEE 802.3 |
| Prot10MB | ProNET 10 Mbps |
| Prot80MB | ProNET 80 Mbps |
| HyChan | Hyperchannel |
| FDDI | Fiber Distributed Data Interface |
| LAPB | X.25 Line Access Procedure, Balanced |
| SDLC | IBM Synchronous Data Link Control protocol |
| T1 | T1 link (USA and Japan) |
| CEPT | T1 link (Europe) |
| BasicISDN | Basic Integrated Services Digital Network |
| PrimISDN | Proprietary Integrated Services Digital Network |
| PPSerial | Proprietary Point to Point Serial |
| PPP | Point to Point Protocol |
| SFTWARLPBK | Software Loopback |
| CLNPoverIP | Connectionless Network Protocol over IP |
| Enet3MB | Ethernet 3 Mbps |
| XNSoverIP | Xerox Network Service Protocol over IP |
| SLIP | Generic Serial Line IP |
| ULTRA | ULTRA Technologies |
| T-3 | T3 link |
| SMDS | Switched Multimegabit Data Service |
| FrameRelay | T1 Frame relay |
| ATM | Asynchronous Transfer Mode |

## MAC Address Label

This label displays the MAC address of the EMME/EMM-E6 interface. Double-click this label to open the CSI Interface Port Model Information view described in ***SPECTRUM Views***.

## Network Address Label

This label displays the current IP address of the interface. To select a different IP address for this interface, do the following:

1. Double-click the Network Address label to open the Secondary Address panel.
2. From the Address/Mask table, select the desired IP address entry to replace the correct IP address.
3. Click **Update**.

### Secondary Address Panel

This panel allows you to view and change the current IP Address and Mask for this device. The Secondary Address Panel includes a table with different IP Addresses and Masks. Information displayed in this table is obtained from the Address Translation table within the device's firmware. The Secondary Address Panel provides the following fields and buttons:

**IP Address**
Displays the current IP address for this interface.

**Update**

This button allows you to save changes made to the current IP address of the interface.

See *Network Address Label* for instructions on how to change the current IP address for the selected interface.

## Gauge Label

This label displays the performance statistic determined by the Gauge Control Panel for this interface. (Refer to the *Gauge Control Panel* later in this chapter for more information.) Double-click on this label to open the Performance-CSIIfPort view described in ***SPECTRUM Views***.

## Interface Options Panel

This area of the Interface Device view allows you to modify the presentation of a highlighted Logical Interface icon. Double-click a non-text area of this panel to open the *Gauge Control Panel*, described later in this section. The Interface Options panel provides the following information:

**Filter**
This menu button allows you to select the application to be displayed by the interface icons. You can leave the application currently running or you can select other applications such as IP routing if the SPECTRUM Routing Services Management Module is loaded. For more information, refer to the ***Routing Services Management Module Guide***.

**Interface Description**
This field provides a description of the highlighted interface. If no interface is highlighted, this field is empty.

## Gauge Control Panel

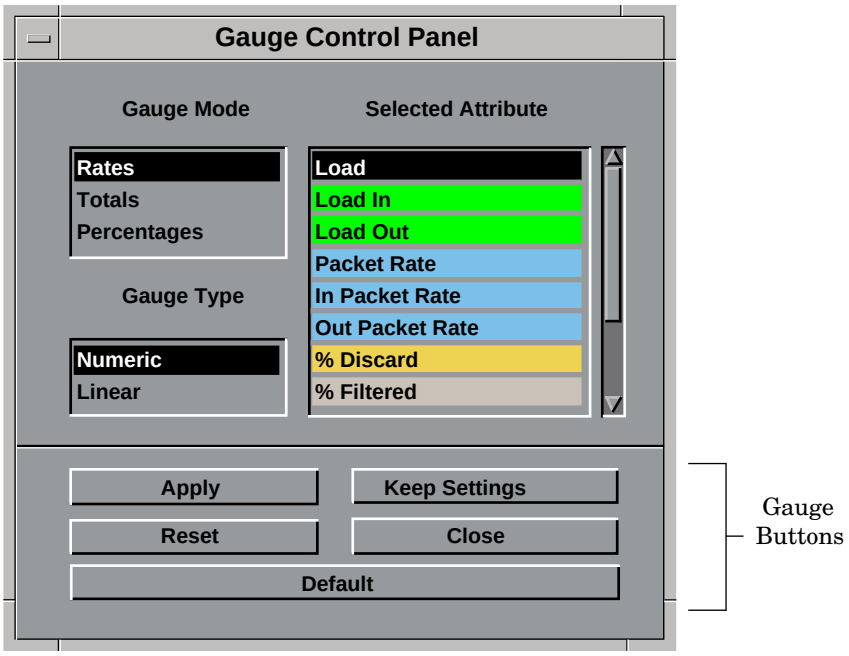
This panel (Figure 2-8) allows you to change the type of statistical information displayed on the Gauge label of the Interface icon. To access the Gauge Control Panel, either double-click the background of the Interface Options panel, or do the following:

1. Within the Interface Device view, highlight the Interface Options panel.
2. From the Icon Subviews menu, select **Gauge Control Panel**.

or

1. Within the Chassis Device view, highlight the EMME/EMM-E6 module icon.
2. From the Icon Subviews Menu, select **Gauge Control Panel**.

**Figure 2-8. Gauge Control Panel**




The Gauge Control Panel provides the following:

- Gauge Mode
- Selected Attribute
- Gauge Type
- Gauge Buttons

**Gauge Mode**
This area allows you to select the type of information shown on the Gauge Label of the interface icon: Rates, Totals, or Percentages. The Percentages selection displays the percentage of the selected interface compared to the rest of the interfaces.

The color displayed on the Gauge Label depends on the particular mode and statistical attribute selected. Table 2-22 and Table 2-23 provide a list of attributes and their corresponding colors for the Totals mode and Rates mode respectively.

**Table 2-22. Rates Gauge Mode: Attributes and Corresponding Colors**

| Selected Attribute | Color |
|---|---|
| Load | Green |
| Load In | Green |
| Load Out | Green |
| Packet Rate | Blue |
| In Packet Rate | Blue |
| Out Packet Rate | Blue |
| % Discard | Tan |
| % Filtered | Gray |
| % Forwarded | Violet |
| % Host Bound | Yellow |
| % Error | Orange |
| % Transmitted | White |

**Table 2-23. Totals Gauge Mode: Attributes and Corresponding Colors**

| Selected Attribute | Color |
|---|---|
| Errors | Orange |
| In Packets | Blue |
| Out Packets | Blue |
| In Octets | Green |
| Out Octets | Green |
| Discards | Tan |
| Forwarded | Purple |
| Host Bound | Yellow |
| Transmitted | White |
| Filtered | Gray |

**Selected Attribute**
This area allows you to select the statistical attribute displayed on the Interface icon's Gauge label. The label changes color to reflect the attribute selected.

**Gauge Type**
This area allows you to select either a numeric or linear display on the Gauge label.

**Gauge Buttons**
The following describes the Gauge buttons:

**Apply**

Applies the current settings to the Gauge label temporarily, but does not save the settings.

**Reset**

Returns the settings to the previously saved values.

**Keep Settings**

Saves the current settings while SpectroGRAPH is running. Settings return to the default while you restart SpectroGRAPH.

**Close**

Closes the Gauge Control Panel.

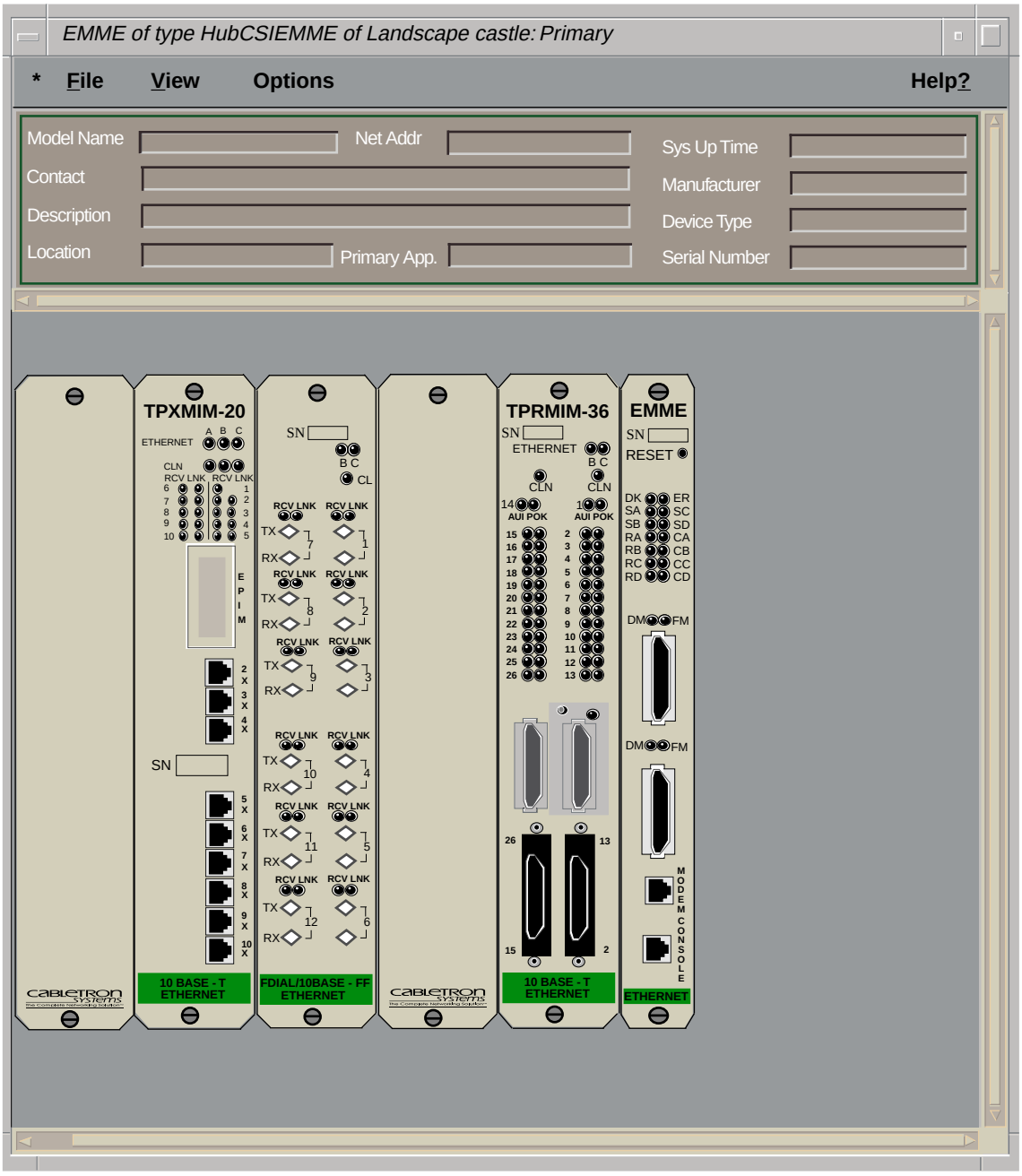
**Default**

Returns the settings to the SPECTRUM default.

# Physical Device View

This view shows a static image of all slots in the MMAC FNB Chassis and devices placed in them, including EMME/EMM-E6. Figure 2-9 shows an example of the Physical Device view.

**Figure 2-9. Physical Device View**



# Chapter 3

# Configuration Views

## What Is in This Chapter

This chapter provides descriptions of the configuration views available for the EMME/EMM-E6 and the modules it manages. These views allow you to access device-specific configuration information.

The following Configuration views are available for the EMME/EMM-E6 and for the other modules managed by this device:

- EMME/EMM-E6 Device Configuration View
- Chassis Configuration View (EMME only)
- Module and Port Configuration Views
- Repeater Configuration View
- CSI Isolated Repeater Configuration View
- Interface Configuration Views
  - Port Configuration - CSIIfPort View
  - Port Configuration - BRIMIfEnet
  - BRIM - FD Interface Configuration View
  - Port Configuration - BRIMIfATM View
- Port Configuration View (for FDDI)
- SMT Device Configuration View
- ATM Client Application Configuration View

Refer to Chapter 1, *Introduction*, for information on *Accessing SPECTRUM Views from the Device Icon* and *Accessing Device-Specific Subviews*.

# EMME/EMM-E6 Device Configuration View

The EMME/EMM-E6 Device Configuration view provides information on the configuration and operating status of the EMME/EMM-E6. In addition, it allows you to change the network connection of the MIMs. The Device Configuration view provides the following information:

**Contact Status**
Indicates whether a connection with the device has been established. Possible status messages displayed in this field include: Established, Lost and Initial.

**Firmware Revision**
Displays the firmware revision for this device (e.g., 3.11.02).

**Hardware Revision**
Displays the hardware revision for this device.

This view also provides the following buttons, which allow you to configure this device:

**Component Table**

Opens the Community Name view. This is an SPMA view and is described in the ***SPECTRUM Portable Management Application Tools Guide***.

**DownLoad Application**

Opens the TFTP Download view. This is an SPMA view and is described in the ***SPECTRUM Portable Management Application Tools Guide***.

**Trap Table**

Opens the Trap Table view. This is an SPMA view and is described in the ***SPECTRUM Portable Management Application Tools Guide***.

**Front Panel Redundancy**

Opens the Front Panel Redundancy view. This is an SPMA view and is described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***.

**Date/Time**

Opens the Device Date/Time view which provides the following fields:

**Date: (MM/DD/YY)**
Allows you to set up and update the date taken from the device's internal clock. The date is displayed in the following format: MMDDYY.

**Time: (HH:MM:SS)**
Allows you to set up and update the time taken from the device's internal clock. The time is displayed in the following format: HHMMSS.

## Interface Configuration Table

This table within the EMME/EMM-E6 Device Configuration view provides the following configuration information for the device and each interface or port:

**Number of Interfaces**
Displays the number of interfaces or ports available from this device.

**Index**
Displays the number for a given interface or port.

**Type**
Displays the type of hardware interface for the port. See Table 2-21 for a full list of possible interface types.

**Phy Address**
Displays the physical (MAC) address of the port.

**Max Frame Size**
Displays the maximum frame size for the EMME/EMM-E6 interfaces.

**Oper Status**
Displays the current operational state of this port (Up, Down, or Testing).

# Chassis Configuration View (EMME only)

This view allows you to view and modify the configuration information for the chassis.

To access the Chassis Configuration view do the following:

1. Within the Chassis Device view, highlight the module icon.
2. From the Icon Subviews menu, select **Chassis Configuration**.

This view provides the following information and fields:

**Chassis Type**
Displays the chassis type. This field can be updated.

**Hardware Rev**
Displays the revision number of the hardware running on this device.

**Time**
Allows you to view and update the time taken from the device's internal clock. The time is displayed in the following format: HHMMSS.

**Date**
Allows you to set up and update the time taken from the device's internal clock. The date is displayed in the following format: MMDDYY.

**Chassis Alarm**
This menu button allows you to enable or disable chassis alarm. Possible menu selections are: Enable and Disable.

**Alarm Condition**
This menu button allows you to configure the condition of the alarm. This field can be updated.

**Sounding Alarm**
This button allows you to reset the sounding alarm.

# Module and Port Configuration Views

Both Module Configuration view and Port Configuration view provide information on the configuration and operating status of other modules (in addition to EMME/EMM-E6) installed in the MMAC FNB chassis and on selected individual ports on those modules.

To access the Module Configuration view do the following:

1. Within the Chassis Device view, highlight the module icon.
2. From the Icon Subviews menu, select **Module Configuration** (for TPXMIM: **Module Segment Details > Network X > Module Configuration**)

To access the Port Configuration view do the following:

1. Within the Chassis Device view highlight the port icon.
2. From the Icon Subviews menu select **Port Configuration**.

The Configuration views are divided into four sections:

- Module Management / Port Management
- Trap configuration
- Alarm Configuration
- Error Source

Module Management and Port Management are the only sections that include fields exclusive to the Module Configuration view and the Port Configuration view, therefore they are described separately.

# Module Management (Module Configuration View Only)

This area of the Module Configuration view provides the following information for the selected module:

**Port Count**
Displays the total number of ports on this module.

**Ports On**
Displays the total number of ports currently in the ON state on this module.

**Ports Operational**
Displays the number of operational ports on this module.

**Module Ports**
This menu button allows you to enable or disable all the ports on this module. Possible states are: Enable and Disable. You can also enable or disable individual ports by selecting **Enable/Disable Port** from the port's Icon Subviews menu.

# Port Management (Port Configuration View Only)

This area of the Port Configuration view provides the following information for the selected port:

**Port ID**
Displays the number of the port identifying its location within the module.

**Administrative Status**
This menu button allows you to select the desired operational state of the port. Possible selections are: Enable and Disable.

**Operational Status**
Displays the current operational state of the port. Possible states are: Not-Operational and Operational.

**Segmentation Status**
Displays the current segmentation state of the port. Possible states are: Not-Segmented and Segmented.

**Link Status**
Displays the current link state of the port. Possible states are: Not-Linked, Linked, and Not-Applicable.

**Topological State**
Displays the current port topological state. Possible states are: Station and Trunk.

**Set Topological State**
This menu button allows you to select the desired topological state for the port. Possible selections are: Not_Forced or Forced_Trunk.

# Trap Configuration

This area of the Module or Port Configuration view allows you to enable or disable any of the following types of traps:

**Link Traps**
This menu button, when enabled, allows all packets indicating a change in link status to be reported within the trap database. Possible menu selections are: Disable, Enable, and other.

**Segmentation Traps**
This menu button, when enabled, allows all packets indicating a change in segmentation status to be reported within the trap database. Possible menu selections are: Disable, Enable, and other.

**Source Address Traps**
This button, when enabled, allows all packets indicating a change in source address to be reported within the trap database. Possible menu selections are: **Disable**, **Enable**, and **other**.

# Alarm Configuration

This area of the Module or Port Configuration view provides configuration and status information for generation of alarms by the selected module. The Alarm Configuration section provides the following information:

**Timebase** (Port Configuration view only)
Displays the time interval within which the specified number of errors needs to occur before the alarm is generated. This number can only be altered in the Repeater Configuration view described later in this chapter.

**Traffic Alarms**
This menu button allows you to enable or disable detection of Traffic Alarms. Possible menu selections are: Disable and Enable.

**Traffic Threshold**
Displays the threshold value within the alarm timebase which, once that number of packets is exceeded, generates a traffic alarm. You can alter this name. Allowable values are 1 to ~4 billion.

**Traffic Alarm Condition**
This menu button allows you to disable the module or port if the traffic alarm threshold is exceeded and an alarm for the module is generated. This feature allows you to prevent excessive network traffic generated by alarm messages that are transmitted by the module. It also aids in module troubleshooting. Possible menu selections are: Don't_Disable_Port and Dissable_Port.

**Collision Alarms**
This menu button allows you to Enable or Disable detection of Collision Alarms. Possible menu selections are: Disable and Enable.

**Collision Threshold**
Displays the threshold value within the alarm timebase which, once that number of collisions per good packet is exceeded, generates a collision alarm. You can alter this number. Allowable values are: 1 to 15 collisions per good packet.

**Collision Alarm Condition**
This menu button allows you to disable the module or port if the collision alarm threshold is exceeded and an alarm for the module is generated. This feature allows you to prevent excessive network traffic generated by alarm messages that are transmitted by the module. It also aids in module troubleshooting. Possible menu selections are: Don't_Disable_Port and Dissable_Port.

**Broadcast Alarms**
This menu button allows you to Enable or Disable detection of Broadcast Alarms. Possible menu selections are: Disable and Enable.

**Broadcast Threshold**
Displays the threshold value within the alarm timebase which, once that number of broadcasts received is exceeded, generates a broadcast alarm. Allowable values are 1 to ~4 billion.

**Broadcast Alarm Condition**
This menu button allows you to disable the module or port if the broadcast alarm threshold is exceeded and an alarm for the module is generated. This feature allows you to prevent excessive network traffic generated by alarm messages that are transmitted by the module. It also aids in module troubleshooting. Possible menu selections are: Don't_Disable_Port and Dissable_Port.

**Error Alarms**
This menu button allows you to Enable or Disable detection of Error Alarms. Possible menu selections are: Disable and Enable.

**Error Threshold**
Displays the threshold value within the alarm timebase which, once the percentage of errors per good packet is exceeded, generates an error alarm. Allowable values are 1 to 100.

**Error Alarm Condition**
This menu button allows you to disable the module or port if the error alarm threshold is exceeded and an alarm for the module is generated. This feature allows you to prevent excessive network traffic generated by alarm messages that are transmitted by the module. It also aids in module troubleshooting. Possible menu selections are: Don't_Disable_Port and Dissable_Port.

## Error Source

This area of the Module or Port Configuration view provides a series of buttons allowing you to select error types to include in the error sum. The selectable error types are as follows:

**CRC**
Describes the number of packets received by the module with bad Cyclical Redundancy Checks (CRCs).

**Runts**
Describes the number of runt packets received by the module. A runt packet is one byte less than the standard Ethernet frame of 64 bytes (not including preamble).

**OOW_Colls**
Describes the number of collisions out of the standard window (51.2µs) due to a network problem.

**Alignment**
Describes the number of misaligned packets detected by the module.

**No_Resource**
Describes the number of times the module ran out of resources (i.e., lack of buffer space) and could not accept packets.

**Giants**
Describes the number of giant packets received by the module. A giant packet exceeds 1518 bytes (not including preamble).

# Repeater Configuration View

The Repeater Configuration view provides information on the configuration and operating status of the repeater.

To access the Repeater Configuration view do the following:

1. Within the Chassis Device view, highlight the Repeater Port label on the EMME/EMM-E6 module icon.
2. From the Icon Subviews menu, select **Repeater Configuration**.

or

1. Within the DevTop or Application view for the EMME/EMM-E6, highlight the CSIRptr Icon.
2. From the Icon Subviews menu, select **Configuration**.

# Repeater Management

This area of the Repeater Configuration view provides the following port information:

**Port Count**
Displays the total number of ports on this LAN segment.

**Ports On**
Displays the total number of ports currently in the ON state on this network.

**Ports Operational**
Displays the number of operational ports on this network.

**Network Ports**
This menu button allows you to enable the network ports on this network segment. Possible states are: NoEnable and Enable.

**Network Port Security**
This menu button allows you to lock or unlock repeater ports. Possible states are: Locked and Unlocked.

# Source Address Management

This section of the Repeater Configuration view allows you to configure the Aging time.

**Aging Interval**
Displays the minimum time, in seconds, that an inactive source address will remain in the database before being selected for removal. The source address timer runs continuously beginning at the time the device is turned on; source addresses that are added to the database during one timer cycle will remain in the database for the rest of the current cycle and at least through the next complete cycle. If no packets have been received from that address during one complete cycle, the address will be removed. Aging Interval is user-configurable. Allowable range is 0 to 4320 (three days).

# Trap Configuration

This area of the Repeater Configuration view allows you to enable or disable any of the following types of traps:

**Link Traps**
This menu button, when enabled, allows all packets indicating a change in link status to be reported within the trap database. Possible menu selections are: Disable, Enable, and other.

**Segmentation Traps**
This menu button, when enabled, allows all packets indicating a change in segmentation status to be reported within the trap database. Possible menu selections are: Disable, Enable, and other.

**Source Address Traps**
This menu button, when enabled, allows all packets indicating a change in source address to be reported within the trap database. Possible menu selections are: Disable, Enable, and other.

# Alarm Configuration

This area of the Repeater Configuration view provides configuration information on generating alarms for the selected module. This section contains the following fields:

**Timebase**
Displays the time interval, in seconds, within which the specified number of errors needs to occur before the alarm is generated. This time interval is user-configurable. The lowest allowable value is 10.

**Traffic Alarms**
This menu button allows you to enable or disable detection of Traffic Alarms. Possible menu selections are: Enable and Disable.

**Traffic Threshold**
Displays the threshold value within the alarm timebase which, once that number of packets is exceeded, generates a traffic alarm. This field is user-configurable. The allowable range is 1 to ~4 billion.

**Collision Alarms**
This menu button allows you to enable or disable detection of Collision Alarms. Possible menu selections are Enable and Disable.

**Collision Threshold**
Displays the threshold value within the alarm timebase which, once that number of collisions per good packet is exceeded, generates a collision alarm. This value is user-configurable. Allowable range is 1 to 15 collisions per good packet.

**Broadcast Alarms**
This menu button allows you to Enable or Disable detection of Broadcast Alarms.

**Broadcast Threshold**
Displays the threshold value within the alarm timebase which, once that number of broadcasts received is exceeded, generates a broadcast alarm. This value is user-configurable. Allowable range is 1 to ~4 billion.

**Error Alarms**
This menu button allows you to enable or disable detection of Error Alarms. Possible menu selections are: Enable and Disable.

**Error Threshold**
Displays the threshold value within the alarm timebase which, once the percentage of errors per good packet is exceeded, generates an error alarm. This value is user-configurable. Allowable range is 1 to 100.

## Error Source

This area of the Repeater Configuration view provides a series of buttons allowing you to select the types of errors to include in the error sum. The selectable error types are as follows:

**CRC**
Describes the number of packets received by the module with bad CRC (Cyclical Redundancy Checks).

**Runts**
Describes the number of runt packets received by the module. A runt packet is one byte less than the standard Ethernet frame of 64 bytes (not including preamble).

**OOW_Colls**
Describes the number of collisions out of the standard window (51.2 μs) due to a network problem.

**Alignment**
Describes the number of misaligned packets detected by the module.

**No_Resource**
Describes the number of times the module ran out of resources (i.e., lack of buffer space) and could not accept packets.

**Giants**
Describes the number of giant packets received by the module. A giant packet exceeds 1518 bytes (not including preamble).

## Board Map

This area of the Repeater Configuration view provides a series of read-only indicator buttons displaying which slots in the MMAC FNB chassis this repeater resides in.

## Manages

This area of the Repeater Configuration view displays the model name of the device managing this repeater. This section also allows you to access the Device Configuration view by double-clicking on the model name of the managing device, or highlighting it and clicking **OK**.

# CSI Isolated Repeater Configuration View

This view provides information on the configuration and operating status of the network segment that the isolated repeater is monitoring.

To access the CSI Isolated Repeater Configuration view do the following:

1. Within the Application view, highlight the CSIIsoRptr icon.
2. From the Icon Subviews menu, select **Configuration**.

In addition to the Model Name and the Network Address, the CSI Isolated Repeater Configuration view provides the following information:

## Repeater Management

This section of the CSI Isolated Repeater Configuration view displays the Port Group Management table, which provides the following information:

**Mgmt. Name**
Displays the slot number where this repeater is located in the chassis.

**Group ID**
Identifies a repeater in a system where a single agent manages multiple repeaters.

**Port Count**
Displays the total number of ports on this LAN segment.

**Ports Enab**
Displays the number of ports enabled.

**Ports On**
Displays the total number of ports in the ON state on this network.

**Ports Oper**
Displays the number of operational ports on this network.

## Manages

This section of the CSI Isolated Repeater Configuration view displays the model name of the device managing this repeater. This section also allows you to access the Device Configuration view by double-clicking on the model name, or highlighting the address and clicking **OK**.

# Interface Configuration Views (EMM-E6 only)

These views provide information on the configuration and operating status of the interfaces provided by the device and the attached EPIMs and BRIMs . Table 3-1 lists the configuration views for the specific types of interfaces.

**Table 3-1. Interface Configuration Views**

| Interface | Configuration View |
|---|---|
| Ethernet (Channels A, B, C, and D) | Port Configuration - BRIMIfEnet View |
| Ethernet (BRIM) | Port Configuration - CSIIfPort View |
| FDDI | BRIM - FD Interface Configuration View |
| ATM | Port Configuration - BRIMIfATM View |

To access these views do the following:

1. Within the Interface Device view, highlight the BRIM's interface icon.
2. From the Icon Subviews menu, select **Configuration**.

All the interface configuration views display the following information and fields:

**Interface Index**
Displays the numerical value identifying the interface or port.

**Interface Type**
Displays the type of interface (e.g., FDDI, ATM).

**Operation Status**
Displays the current operating status of the interface or port. Possible values are: On, Off, or Test.

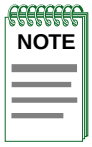
**Admin Status**
This menu button allows you to enable or disable the current administrative state of the port. Possible values are: On (enabled), Off (disabled), or Test.

**IF Description**
Provides a description of the interface or port (e.g., Ctron FDDI Port Channel E).

# Port Configuration View (for FDDI)

This view provides information concerning the configuration and management of the port located on the front panel of the FDDI BRIM. To access the Port Configuration view, do the following:

1. Within the Chassis Device view, highlight the FDDI port label.
2. From the Icon Subviews menu, select **Port Configuration View**.




*The FDDI Port Configuration view is only accessible for the EMM-E6 with a FDDI BRIM attached to it.*

The Port Configuration view provides the following information concerning the port management:

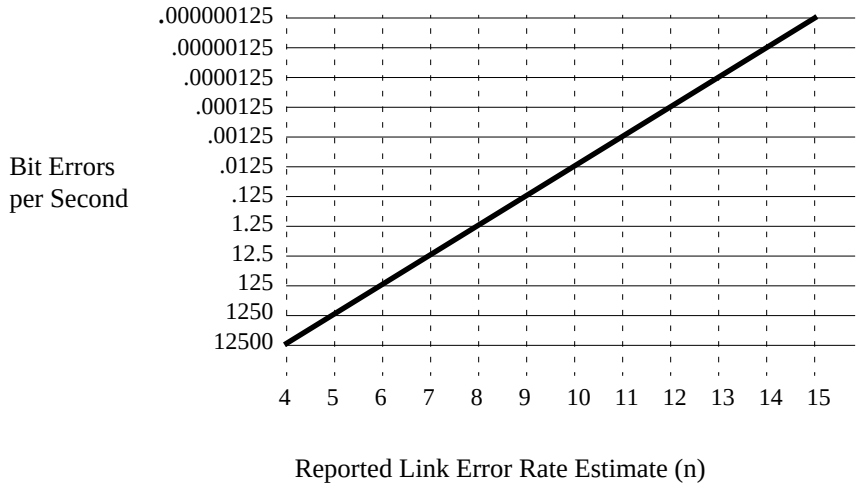
**Port Action**
Provides a menu button that allows you to enable/disable the port. Possible menu selections are: Other, Enable_Port, and Disable_Port. The state returns to Other once the port is Enabled/Disabled.

**Port State**
Displays the status of this port. Possible states are: Disabled, Connecting, Standby, or Active.

**Port Type**
Displays the type of port. Possible port types are: A_Port or B_Port, Slave or Master.

**Link Error Rate Estimate**
Displays a cumulative long-term average of the bit error rate, which represents the quality of the physical link. The link error rate estimate is computed when the port is connected and every 10 seconds thereafter. It ranges from $10^{-4}$ to $10^{-15}$ and is reported as a whole integer. For example, if the port's link error rate estimate is computed to be $10^{-5}$, the value reported in this field would be 5, which represents an actual rate of 1,250 bit errors per second. A lower link error rate estimate indicates a higher bit error rate, as shown in Figure 3-1.

**Figure 3-1. Link Error Rate Estimate**




**Link Error Monitor Count**
Displays the aggregate link error monitor count. This count is set to zero on station power up and increments each time the port's link error monitor detects an error. An increasing link error monitor count usually indicates a problem with the connectors or the cable between this port and the node.

**Link Error Rate Cutoff**
Displays the link error rate threshold at which a link connection is flagged as faulty and the port disabled by SMT. The default link error rate cutoff threshold is 7, which represents 12.5 bit errors per second (refer to Figure 3-1).

**Link Error Rate Alarm**
Displays the link error rate threshold that, if exceeded, generates an alarm for the port. The default link error rate alarm threshold is 8, which represents 1.25 bit errors per second (refer to Figure 3-1).

**Link Error Monitor Reject Count**
Displays the link error monitor count of the times the link has been rejected.

# SMT Device Configuration View

This view provides information on the configuration and operating status of the FDDI Station and FDDI SMT.

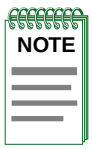
To access this view do the following:

1. Within the Device Topology (Dev Top) or Application view, highlight the FddiSMT Application icon.
2. From the Icon Subviews menu, select **Configuration**

or

1. Within the Chassis Device view, highlight the FDDI BRIM label.
2. From the Icon Subviews menu, select **FDDI Configuration**.

The SMT Device Configuration view is divided into two tables: Station Configuration and SMT Information described below.




*The SMT Device Configuration view is only accessible for the EMM-E6 with a FDDI BRIM attached to it.*

## Station Configuration View

This section of the SMT Device Configuration view provides the following configuration information on the FDDI station:

**Ring State**
Indicates the current state of the FDDI Ring. Table 3-2 provides the possible states and their descriptions.

**Table 3-2. FDDI Ring States**

| Ring States | Description |
|---|---|
| Isolated | The concentrator is not attached to the ring. |
| Non-Op | The concentrator is attempting to enter the ring. |
| Ring-Op | The ring is operational. |
| Detect | The claim/beacon process of the FDDI ring protocol has exceeded 1 second. This indicates a potential problem. |

**Table 3-2. FDDI Ring States (Continued)**

| | |
|---|---|
| Non-Op-Dup | The ring failed to complete the claim/beacon process because a duplicate FDDI address has been detected. |
| Ring-Op-Dup | The ring is operational but a duplicate FDDI address has been detected. |

### MAC Configuration

Displays the actual configuration of the station. Table 3-3 shows all possible configurations and their descriptions.

**Table 3-3. SMT MAC Configurations**

| Ring States | Description |
|---|---|
| Isolated | The port is not inserted into any path. |
| Local_A | The A port is inserted into a local path and the B port is not. |
| Local_B | The B port is inserted into a local path and the A port is not. |
| Local_AB | Both A and B are inserted into a local path. |
| Local_S | The S port is inserted into a local path. |
| Wrap_A | The secondary path is wrapped to the A port. |
| Wrap_B | The secondary path is wrapped to the B port. |
| Wrap_AB | The primary path is wrapped to the B port and the secondary path is wrapped to the A port. |
| Wrap_S | The primary port is wrapped to the S port. |
| C_Wrap_A | The primary and secondary paths are joined internally in the station and wrapped to the A port. Regarding the token flow, all of the resources on the secondary path precede those of the primary path. |
| C_Wrap_B | The primary and secondary paths are joined internally in the station and wrapped to the B port. Regarding the token flow, all of the resources on the secondary path precede those of the primary path. |
| C_Wrap_S | The primary and secondary paths are joined internally in the station and wrapped to the S port. Regarding the token flow, all of the resources on the secondary path precede those of the primary path. |
| Thru | The primary path enters the A port and emerges from the B port. The secondary path enters the B port and emerges from the A port. |

### MAC Path

Displays the current path into which this MAC is inserted. Possible paths are: Isolated, Local, Secondary, Primary, Concatenated, and Thru.

**MAC Address**
Displays the MAC (physical) address of this station.

**MAC Count**
Displays the number of MACs supported by this station.

**Non Master Ports**
Displays the number of non-master ports on this station.

**Master Ports**
Displays the number of master ports on this station.

## SMT Information

This section of the SMT Device Configuration view provides the following configuration information on the FDDI Station Management (SMT):

**SMT Version**
Displays the version of SMT running on this FDDI BRIM.

**OBS Present**
Indicates whether an Optical Bypass Switch (OBS) connects to this FDDI BRIM.

**T-Notify (sec)**
Allows you to view and alter the timer value, in seconds, used in Neighbor Notification Protocol. The allowed range is 2-30 seconds.

**T-Req (milli sec)**
Displays the Target Token Rotation Time (TTRT) bid, in milliseconds, made by this FDDI BRIM.

**T-Neg (milli sec)**
Displays the winning TTRT bid, in milliseconds, on the ring.

**TVX (milli sec)**
Displays the valid transmission time, in milliseconds.

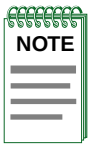
# ATM Client Application Configuration View

This view provides configuration information on the ATM Client Application. To access the ATM Client Configuration view do the following:

1. Within the Chassis Device view, highlight the ATM BRIM label.
2. From the Icon Subviews menu, select **Configuration**.

or

1. Within the Interface Device view, highlight the ATM Interface.
2. From the Icon Subviews menu, select **Protocols** -> **ATMClientApp** -> **Configuration**.




*The ATM Client Application Configuration view is only accessible for the EMM-E6 with an ATM BRIM attached to it.*

The Configuration view includes the Configuration table which provides the following information:

**Max VPCs**
Indicates the maximum number of VPCs (Virtual Path Connections) supported at this ATM interface. At the User Network Interface (UNI), the maximum number of VPCs ranges from 0 to 256.

**Max VCCs**
Indicates the maximum number of VCCs (Virtual Channel Connections) supported at this ATM interface.

**Conf VPCs**
Indicates the number of VPCs configured for use at this ATM interface. At the User Network Interface (UNI), the configured number of VPCs ranges from 0 to 256.

**Conf VCCs**
Indicates the number of VCCs configured for use at this ATM interface.

**Max VPI Bits**
Indicates the maximum number of active VPI (Virtual Path Identifier) bits configured for use at this ATM interface. At the UNI (User Network Interface), the maximum number of active VPI bits configured for use ranges from 0 to 8.

**Max VCI Bits**
Indicates the maximum number of active VCI (Virtual Channel Identifier) bits configured for use at this ATM interface.

**ILMI VPI**
Indicates the VPI (Interim Local Management Interface) value of the VCC supporting the ILMI at this ATM interface. If the values of both ILMI VPI and ILMI VCI equal 0, then the ILMI is not supported for this ATM interface.

**ILMI VCI**
Indicates the VCI value of the VCC supporting the ILMI at this ATM interface. If the values of both ILMI VPI and ILMI VCI equal 0, then the ILMI is not supported for this ATM interface.

**Address Type**
Indicates the type of primary ATM address configured for use at this ATM interface.

**Admin Address**
Indicates the address assigned for administrative purposes. If this interface has no assigned administrative address or if the address used for administrative purposes is the same as that used for the physical address, then this is an octet string of zero length.

**Neighbor Address**
Indicates the IP address of the neighbor system connected to the far end of this interface to which a Network Management Station can send SNMP messages as IP datagrams to UDP port 161 in order to access network management information concerning the operation of that system.

**Neighbor If Name**
Indicates the name of the interface on the neighbor system at the far end of this interface, and to which this interface connects. If the neighbor system is manageable through SNMP and supports the object ifName, the value of this object must be identical to that of the ifName for the ifEntry of the lowest level physical interface for this port. If this interface does not have a name, the value of this object is a zero length string.

The ATM Client Application Configuration view Configuration table can be sorted, searched, and updated using the following buttons located within this table:

**Sort**

This button allows you to sort the table based on the column heading you select. To use the Sort feature, select a column heading and click the **Sort** button. The table is rearranged according to the chosen column.

**Find**

This button allows you to search the table for a specific entry. To use the Find feature, select a column heading, click the **Find** button, and enter a search string in the dialog box.

**Update**

This button allows you to update information in the table.

# Chapter 4

# Event and Alarm Messages

## What Is in This Chapter

This chapter lists the types of events and alarms generated by the EMME/EMM-E6 and provides any probable cause messages corresponding to these alarms.

## Device Events and Alarms

Table 4-1 lists the SPECTRUM database directory paths (in bold) and the messages displayed for the Event Log and Alarm Manager when applicable.

**Table 4-1. EMME/EMM-E6 Events and Alarms**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event00010203**<br><br>{d "%w- %d %m-, %Y - %T"} - The model created is not the same type as the device. Model type = {t}, Name = {m}, User = {u}. (event [{e}]) | **CsPCause/Prob00010203**<br><br>The model created is not the same type as the device. |
| **CsEvFormat/Event00010301**<br><br>{d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} has been contacted. (event [{e}]) | **No Probable Cause Message** |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event00010306**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has been cold started. (event [{e}]) | **No Probable Cause Message** |
| **CsEvFormat/Event00010307**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m} has been warm started. (event [{e}]) | **No Probable Cause Message** |
| **CsEvFormat/Event00010308**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}]) | **CsPCause/Prob00010308**<br><br>Communication link is down. |
| **CsEvFormat/Event00010309**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}]) | **No Probable Cause Message** |
| **CsEvFormat/Event0001030a**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}]) | **CsPCause/Prob0001030a**<br><br>Authorization failure. Other user is trying to connect to device with an invalid community string. |
| **CsEvFormat/Event0001030b**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {0 1}. (event [{e}]) | **CsPCause/Prob0001030b**<br><br>Lost contact with EGP neighbor. |
| **CsEvFormat/Event00010401**<br><br>{d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with an IP address already used by another model. (event [{e}]) | **CsPCause/Prob00010401**<br><br>DUPLICATE IP ADDRESS<br>The model has the same IP address as that of some other model. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event00010402**<br><br>{d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with a physical (Mac) address already used by another model. (event [{e}]) | **CsPCause/Prob00010402**<br><br>DUPLICATE PHYSICAL ADDRESS The model has the same Physical address (Mac address) as that of some other model. |
| **CsEvFormat/Event00010702**<br><br>{d "%w- %d %m-, %Y - %T"} - Alarm number {I 0x700} cleared for device {m} of type {t}. (event [{e}]) | **No Probable Cause Message** |
| **CsEvFormat/Event000d0001**<br><br>{d "%w- %d %m-, %Y - %T"} - Bridge {m} of type (t) has reported a root change. (event [{e}]) | **CsPCause/Prob000d0001**<br><br>This bridge has become the new root of the Spanning Tree. |
| **CsEvFormat/Event000d0002**<br><br>{d "%w- %d %m-, %Y - %T"} - Bridge {m} of type (t) has reported a network topology change. (event [{e}]) | **CsPCause/Prob000d0002**<br><br>A port has transitioned from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state. |
| **CsEvFormat/Event000d0101**<br><br>{d "%w- %d %m-, %Y - %T"} - Port {I 3} on module in slot {I 1} of {m} ({t}), has segmented. | **CsPCause/Prob000d0101**<br><br>The port has made 32 consecutive attempts to transmit which resulted in a collision each time or the port collision detector was turned on for longer than 2.4 milliseconds. Each of these collision occurrences are caused by a cabling problem of extremely high rates of traffic on the segment the port is attached to. |
| **CsEvFormat/Event000d0102**<br><br>{d "%w- %d %m-, %Y - %T"} - Port {I 3} on module in slot {I 1} of {m} ({t}), has unsegmented. | **CsPCause/Prob000d0102**<br><br>The port has transmitted or received a valid packet. This can occur when a cabling or termination fault has been corrected. Unsegmenting can also occur on a port that previously was not in use. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0103**<br><br>{d "%w- %d %m-, %Y - %T"} - Network configuration change reported by {m} ({t}). Device is linked to port {I 3} on module in slot {I 1}. | **CsPCause/Prob000d0103**<br><br>A device supporting link integrity, fiber optic, or twisted pair has made a valid connection (link) to this port. |
| **CsEvFormat/Event000d0104**<br><br>{d "%w- %d %m-, %Y - %T"} - Network configuration change reported by {m} ({t}). Device previously linked to port {I 3} on module in slot {I 1} has ceased to transmit link integrity pulse. | **CsPCause/Prob000d0104**<br><br>A device previously linked to this port has been removed, powered down, or the cable segment has a fault. |
| **CsEvFormat/Event000d0105**<br><br>{d "%w- %d %m-, %Y - %T"} - New source address {X 5}, is detected on {m} ({t}), port {I 3} of module in slot {I 1}. | **CsPCause/Prob000d0105**<br><br>A device, previously linked or not, has transmitted a packet that was received on this port. The device is either new or has been powered up but has not transmitted a packet during the aging time period. |
| **CsEvFormat/Event000d0106**<br><br>{d "%w- %d %m-, %Y - %T"} - Source address {X 5}, has timed out on port {I 3} of the module in slot {I 1} of {m} ({t}). | **CsPCause/Prob000d0106**<br><br>A device linked or not linked to this port has not transmitted a packet during the aging time period, and has been removed from the source address table of the device. |
| **CsEvFormat/Event000d0107**<br><br>{d "%w- %d %m-, %Y - %T"} - Device configuration change reported by {m} ({t}). The module in slot {I 1} has been removed. | **CsPCause/Prob000d0107**<br><br>A module within this hub has been removed or has failed. |
| **CsEvFormat/Event000d0108**<br><br>{d "%w- %d %m-, %Y - %T"} - Device configuration change reported by {m} ({t}). A module has been inserted into {I 1} of the MMAC. | **CsPCause/Prob000d0108**<br><br>A module has been inserted into this hub. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0109**<br><br>{d "%w- %d %m-, %Y - %T"} - Network configuration change reported by {m} ({t}). Port {I 3} in slot {I 1} has failed redundancy polling and has switched to a backup port. | **CsPCause/Prob000d0109**<br><br>The polled device(s) in the redundant circuit polling list has failed to respond. The device(s) has failed, been powered down, or a cable fault from the active port to the polled device has occurred. Check the retry count as it may need to be adjusted on a busy network segment. Normal collision occurrences may occur causing the poll packet to not reach its destination. |
| **CsEvFormat/Event000d010a**<br><br>{d "%w- %d %m-, %Y - %T"} - Network configuration change reported by {m} ({t}). Port {I 3} in slot {I 1} has now become active as the result of a redundancy polling failure. | **CsPCause/Prob000d010a**<br><br>The polled device has been communicated with via a backup port and the port is now active. The other ports in this redundant circuit are now designated as backup and are turned off to prevent data loops on the network. |
| **CsEvFormat/Event000d010b**<br><br>{d "%w- %d %m-, %Y - %T"} - Redundancy diagnostics of {m} ({t}), indicate that the redundant link for module {I 1}, port {I 3} has failed. | **CsPCause/Prob000d010b**<br><br>The cable segment connected to the port has a cable fault and should be checked for continuity as soon as possible in the event the other ports in this redundant circuit fail and this port is needed. |
| **CsEvFormat/Event000d010f**<br><br>{d "%w- %d %m-, %Y - %T"} - User defined traffic threshold - {I 1} packets within {I 3} seconds, exceeded on module {I 5} of {m} ({t}). | **CsPCause/Prob000d010f**<br><br>The packet rate on this module has exceeded user defined limits. The device(s) attached to this module may have an application which requires a large amount of network bandwidth. If the application required a large amount of network bandwidth, then a bridge or router could be used to logically separate various network segments. Use port level thresholds to further troubleshoot to a device level. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0110**<br><br>{d "%w- %d %m-, %Y - %T"} - Error threshold exceeded. An error threshold of {I 1}% good packets in {I 5} seconds, exceeded on module in slot {I 7}. | **CsPCause/Prob000d0110**<br><br>This threshold will indicate that a malfunctioning device is present on this module or that a cable fault exists. A port level threshold should be set to further troubleshoot to the offending node. |
| **CsEvFormat/Event000d0111**<br><br>{d "%w- %d %m-, %Y - %T"} - Collision threshold exceeded. Collisions exceeded {I 1}% of good packets in {I 3} seconds on the module in slot {I 5} of {m} ({t}). | **CsPCause/Prob000d0111**<br><br>Collisions are caused by many nodes contending for the network of cabling faults. Use port level thresholds to further troubleshoot to a device level. |
| **CsEvFormat/Event000d0112**<br><br>{d "%w- %d %m-, %Y - %T"} - Traffic threshold, packets per {I 3} seconds, exceeded on port {I 7} on module in slot {I 5} of {m} ({t}). | **CsPCause/Prob000d0112**<br><br>The device(s) attached to this port may have an application which requires a large amount of network bandwidth. If the application requires a large amount of network bandwidth, then a bridge or router could be used to logically separate various network segments. |
| **CsEvFormat/Event000d0113**<br><br>{d "%w- %d %m-, %Y - %T"} - Error threshold exceeded. An error threshold of {I 1}% good packets in {I 5} seconds, exceeded on port {I 9} on module in slot {I 7} of {m} ({t}). | **CsPCause/Prob000d0113**<br><br>The device(s) attached to this port could have a hardware failure where it transmits invalid packets or the cable segment attached to this port may have a problem. Check cable for loose connection or continuity problems. |
| **CsEvFormat/Event000d0114**<br><br>{d "%w- %d %m-, %Y - %T"} - Collision threshold exceeded. Collisions exceeded {I 1}% of good packets in {I 3} seconds on port {I 7} on module in slot {I 5} of {m} ({t}). | **CsPCause/Prob000d0114**<br><br>The device(s) attached to this port may have an adapter card problem which causes them to transmit without regarding network availability or a cable problem may exist. Check adapter card and cable for loose connections, termination problems, or improper pinouts. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0115**<br><br>{d "%w- %d %m-, %Y - %T"} - Port type changed. Port {I 3} of module in slot {I 1} has changed types of {m} ({t}). | **CsPCause/Prob000d0115**<br><br>The number of addresses in the source address table has changed. If more than one address is learned on a port for one aging time period, the port is designated as a trunk port. A port connecting two hubs or a coax segment with multiple taps are examples of trunk ports. If a port has one address in the source address table for two aging times, the port is designated as a station port. An example of a station port would be a twisted pair "home run" to a PC. |
| **CsEvFormat/Event000d0117**<br><br>{d "%w- %d %m-, %Y - %T"} - Port security violation has occurred on port {I 3} of module in slot {I 1} has changed types of {m} ({t}). | **CsPCause/Prob000d0117**<br><br>This event is only generated when the hub has port locking enabled. When a hub is locked, the source MAC addresses are learned on each port. When a port detects an attached device has changed its address, the device will note that the new address is not in the source address table. This will disable and lock the port which then transmits this trap. This trap would be generated if an adapter were replaced or if an intruder attempts to access the network. |
| **CsEvFormat/Event000d0118**<br><br>{d "%w- %d %m-, %Y - %T"} - Port violation reset, port {I 3} of module in slot {I 1} of {m} ({t}). | **CsPCause/Prob000d0118**<br><br>The network administrator has located the offending device that caused the port violation and has re-enabled the port for use by the original network address for that port. |
| **CsEvFormat/Event000d0119**<br><br>{d "%w- %d %m-, %Y - %T"} - Environment Temperature Warm condition for module in slot {I 1} reported by {m} ({t}). | **CsPCause/Prob000d0119**<br><br>The module may be defective or a fan has failed in the chassis. Check the alarm log for this device for any fan alarms. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d011a**<br><br>{d "%w- %d %m-, %Y - %T"} - Environment Temperature Hot condition for module in slot {I 1} reported by {m} ({t}). | **CsPCause/Prob000d011a**<br><br>The module may be defective or a fan has failed in the chassis. This alarm indicates a serious heat condition and should be addressed immediately. |
| **CsEvFormat/Event000d011b**<br><br>{d "%w- %d %m-, %Y - %T"} - Environment Voltage Low condition has been detected by power supply in slot {I 1} of {m} ({t}). | **CsPCause/Prob000d011b**<br><br>The internal voltage of the power supply module is low. The voltage condition indicates that either the supply itself is defective or an AC power failure has occurred in the power supply module. |
| **CsEvFormat/Event000d011c**<br><br>{d "%w- %d %m-, %Y - %T"} - Environment Temperature Normal condition for module in slot {I 1} reported by {m} ({t}). | **CsPCause/Prob000d011c**<br><br>A chassis or cooling system problem at this device location has been corrected. |
| **CsEvFormat/Event000d011d**<br><br>{d "%w- %d %m-, %Y - %T"} - Environment Voltage Normal condition has been detected by power supply in slot {I 1} of {m} ({t}). | **CsPCause/Prob000d011d**<br><br>The problem with the power supply module or AC power feed has been corrected and the unit is now functioning normally. |
| **CsEvFormat/Event000d011e**<br><br>{d "%w- %d %m-, %Y - %T"} - A fan in the system's chassis has failed or is operating at an abnormal RPM rate, has been detected by {m} ({t}). | **CsPCause/Prob000d011e**<br><br>A fan(s) in the fan tray assembly has failed or the fan tray has been removed. The situation is not critical but temperature warm or temperature hot traps may follow. If the temperature traps have appeared in the alarm log, then the failure should be addressed before overheating damages the device. |
| **CsEvFormat/Event000d011f**<br><br>{d "%w- %d %m-, %Y - %T"} - A fan in the system's chassis has resumed normal operation, has been detected by {m} ({t}). | **CsPCause/Prob000d011f**<br><br>The problem previously detected with the fan assembly has been corrected and the unit is now functioning normally. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0121**<br><br>{d "%w- %d %m-, %Y - %T"} - Board Broadcast Threshold Exceeded. | **CsPCause/Prob000d0121**<br><br>This trap will be generated when the broadcast (packets per time interval) has been exceeded for the given module. |
| **CsEvFormat/Event000d0122**<br><br>{d "%w- %d %m-, %Y - %T"} - Port Broadcast Threshold Exceeded. | **CsPCause/Prob000d0122**<br><br>This trap will be generated when the broadcast (packets per time interval) has been exceeded for the given port. |
| **CsEvFormat/Event000d0125**<br><br>{d "%w- %d %m-, %Y - %T"} - System Voltage Low condition has been detected by {m} ({t}). | **CsPCause/Prob000d0125**<br><br>The internal 5 volt line of the system is low. The voltage low condition indicates that either the power supplies are failing or there is not enough power available to the host modules. This is a serious condition and should be addressed immediately. |
| **CsEvFormat/Event000d0126**<br><br>{d "%w- %d %m-, %Y - %T"} - System Voltage Normal condition has been detected by {m} ({t}). | **No Probable Cause Message** |
| **CsEvFormat/Event000d0127**<br><br>d "%w- %d %m-, %Y - %T"} - An EPIM has been removed from port {I 3} on module in slot {I 1} of {m} ({t}). | **CsPCause/Prob000d0127**<br><br>An Ethernet Port Interface Module (EPIM) has been physically removed. |
| **CsEvFormat/Event000d0128**<br><br>{d "%w- %d %m-, %Y - %T"} - An {T EPIMType 5} has been inserted into port {I 3} on module in slot {I 1} of {m} ({t}). | **No Probable Cause Message** |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0129**<br><br>{d "%w- %d %m-, %Y - %T"} - Traffic threshold, {I 1} packets per {I 3} second exceeded on the repeater network {I 5} of {m} ({t}). | **CsPCause/Prob000d0129**<br><br>The device(s) attached to this channel may have an application level problem. The attached devices may be operating properly but the application requires a large amount of network bandwidth. If the application requires a large amount of network bandwidth, then a bridge or router may be used to logically separate various network segments. This trap indicates that module or port level thresholds on this repeater channel are needed to pinpoint high bandwidth users. |
| **CsEvFormat/Event000d0130**<br><br>{d "%w- %d %m-, %Y - %T"} - Error threshold exceeded. An error threshold of, {I 1}% good packets in {I 5} seconds, exceeded on repeater network {I 7} of {m} ({t}). | **CsPCause/Prob000d0130**<br><br>A user defined threshold has been exceeded on this channel. This threshold could indicate that a malfunctioning device is present on this channel or that a cable fault exists. A module or port level threshold should be set to further troubleshoot to the offending node. |
| **CsEvFormat/Event000d0131**<br><br>{d "%w- %d %m-, %Y - %T"} - Collision threshold exceeded. Collisions exceeded {I 1}% good packets in {I 3} seconds on repeater network {I 5} of {m} ({t}). | **CsPCause/Prob000d0131**<br><br>A user-defined threshold has been exceeded on this channel. This threshold could indicate that a malfunctioning device is present on this channel or that a cable fault exists. Collisions are usually caused by many nodes contending for the network. As traffic rates increase, the collision rate usually follows. Thus, if this channel has a high bandwidth utilization, a high collision rate is not unlikely. Use module and port level thresholds to further troubleshoot to a device level. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d0132**<br><br>{d "%w- %d %m-, %Y - %T"} - Network port security lock has been {I 1} on repeater network {I 3} on {m} ({t}). | **CsPCause/Prob000d0132**<br><br>The network administrator has changed the status of port locking for this repeater channel. The security feature locks all ports on this repeater channel so that only a valid user already in the source address table can access the network. |
| **CsEvFormat/Event000d0133**<br><br>{d "%w- %d %m-, %Y - %T"} - Repeater Broadcast Threshold Exceeded. | **CsPCause/Prob000d0133**<br><br>This trap will be generated when the broadcast (packets per time interval) has been exceeded for the repeater. |
| **CsEvFormat/Event000d0136**<br><br>{d "%w- %d %m-, %Y - %T"} - ChBoard Insertion. A module has been inserted into slot {I 1}. | **CsPCause/Prob000d0136**<br><br>A module has been inserted into this hub. |
| **CsEvFormat/Event000d01a0**<br><br>{d "%w- %d %m-, %Y - %T"} - A Port Interface Module has been inserted into port {I 3} of interface {I 1} on {m} ({t}). | **CsPCause/Prob000d01a0**<br><br>A Port Interface Module has been physically inserted. |
| **CsEvFormat/Event000d01a1**<br><br>{d "%w- %d %m-, %Y - %T"} - A Port Interface Module has been removed from port {I 3} of interface {I 1} on {m} ({t}). | **CsPCause/Prob000d01a1**<br><br>A Port Interface Module has been physically removed. |
| **CsEvFormat/Event000d01a2**<br><br>{d "%w- %d %m-, %Y - %T"} - Network configuration change reported by {m} ({t}). Device linked to port {I 3} on interface {I 1}. | **CsPCause/Prob000d01a2**<br><br>A device supporting link integrity, fiber optic or twisted pair, has made a valid connection (link) to this port. |

**Table 4-1. EMME/EMM-E6 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event000d01a3**<br><br>{d "%w- %d %m-, %Y - %T} - Port {I 3} on interface {I 1} of {m} {t} has unsegmented. | **CsPCause/Prob000d01a3**<br><br>A device previously linked with this port has been removed, powered down, or the cable segment has a fault. |
| **CsEvFormat/Event000d0351**<br><br>{d "%w- %d %m-, %Y - %T"} - Front panel redundant port {I 1} has been activated by device {m} of type {t}. | **CsPCause/Prob000d0351**<br><br>A new port has been activated for the front panel redundant circuit. This does NOT indicate this port is usable, but is being tested. |

# Chapter 5

# Application View

## What Is in This Chapter

This chapter describes the following device-specific applications for the EMME/EMM-E6:

- Network (A,B. or C) Application (CSIRptrApp)
- Download Application (CtDownloadApp)
- Isolated Repeater Application (CSIIsolRptrApp)

In addition, this chapter describes the following BRIM-specific applications for the EMM-E6:

- ATM Client Application
- FddiSMT Application

# Applications Not Covered in This Chapter

This device supports the following common applications described in***MIB II Applications, Bridging Applications, and Miscellaneous Applications*.**

- Bridging (CSIBridge)
  - Spanning Tree (Ct_Stp_App)
  - Transparent (Transparnt_App)
  - Static (Static_App)
- MIB-II (SNMP2_Agent)
  - IP (IP2_App)
  - System (System2_App)
  - ICMP (ICMP_App)
  - UDP (UDP2_App)

The following major applications are available if you purchase the associated services. These applications are described in their management module guides.

- Routing Services (CtRouter)
- DLM (DLM_Agent)
- Standard RMON (RMONApp)

# Device Application View

This view shows the common and device-specific applications supported by this device and provides access to application-specific information.

Refer to Chapter 1, *Introduction,* for information on *Accessing SPECTRUM Views from the Device Icon* and *Accessing Device-Specific Subviews*.

Figure 5-1 provides an example of an Application view in the icon mode. Figure 5-2 provides an example of an Application view in the list mode.

To change the display mode, select **View -> Mode -> List** or **Icon**.

**Figure 5-1. Device Application View Icon Mode)**

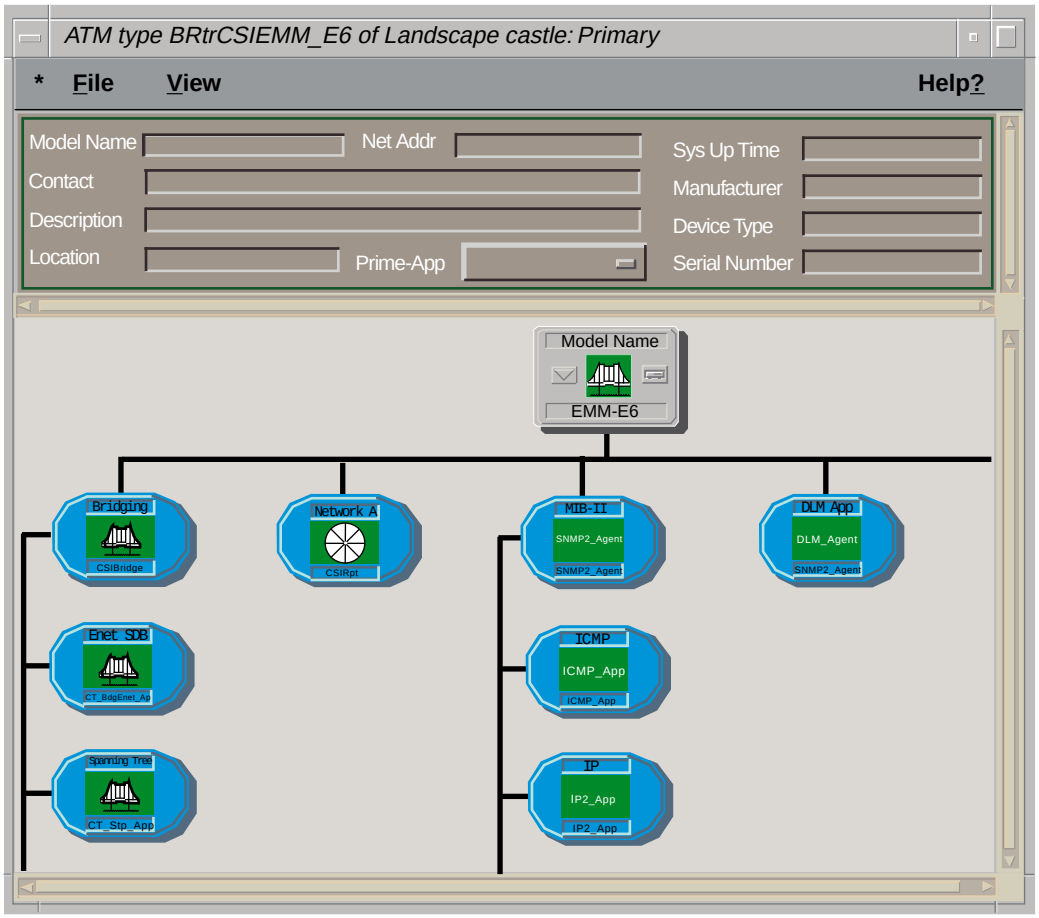
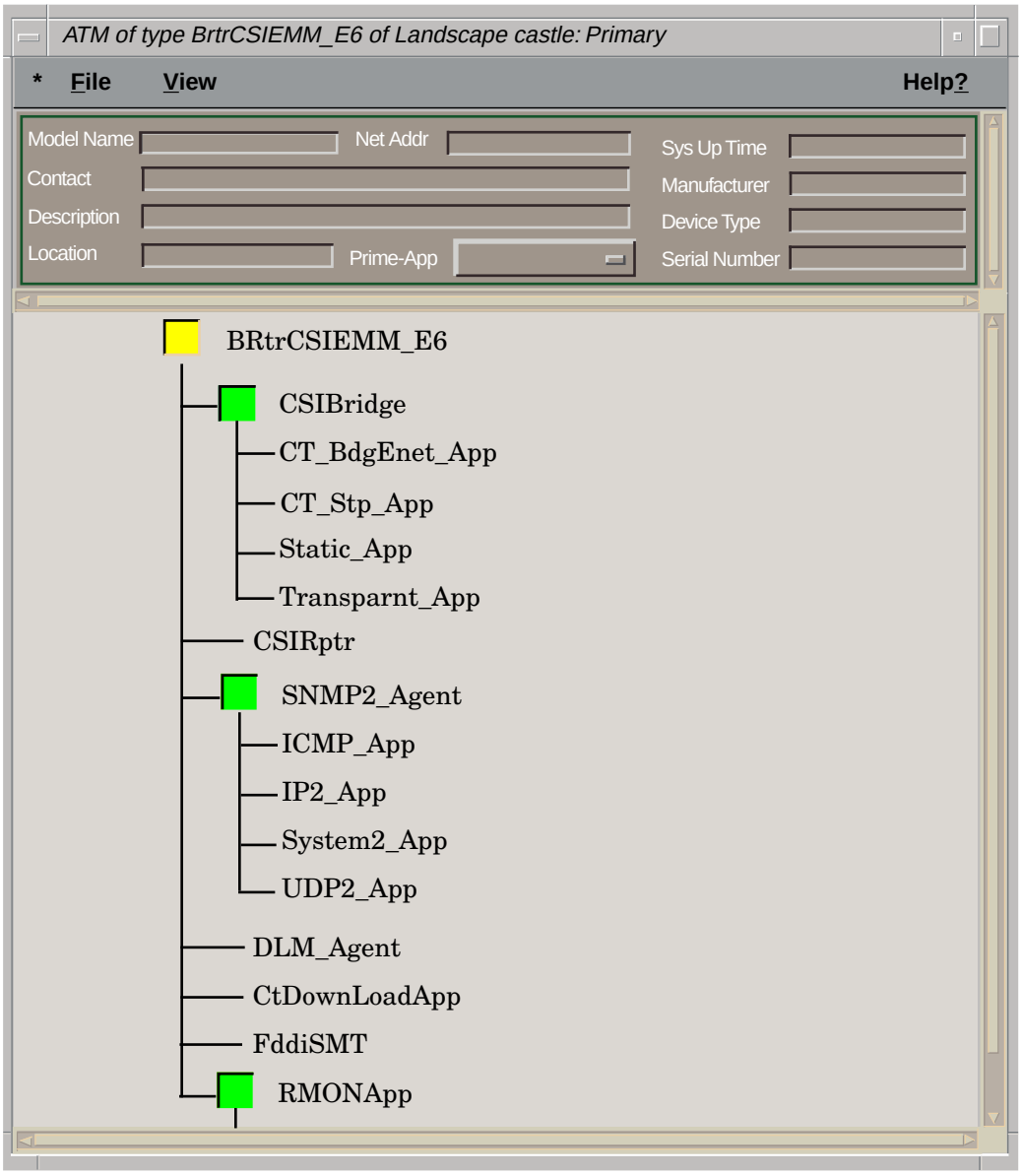


**Figure 5-2. Device Application View (List Mode)**



# Network (A, B, or C) Application

This section describes the Network (A, B, or C) application supported by this device. The model type for this application is CSIRptr. Table 5-1 lists all the application-specific subviews available from the Icon Subviews menu for the Network (A, B, or C) Application. Table 5-2 describes a submenu accessible by clicking the Performance option of the Icon Subviews menu. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 5-1. Network (A, B, or C) Application Subviews Menu**

| Menu Selection | Description |
|---|---|
| Device | Opens the *Chassis Device View* described in Chapter 2, *Device Views*. |
| Dev Top | Opens the Device Topology view described in ***SPECTRUM Views***. |
| Performance | Opens the submenu described in Table 5-2. |
| Configuration | Opens the *Repeater Configuration View* described in Chapter 3, *Configuration Views*. |
| Repeater Redundancy | Opens the Repeater Redundancy view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Repeater Source Address | Opens the repeater Source Address view described in the ***Portable Management Application for the EMME SPECTRUM User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Repeater Security Configuration | Opens the Repeater Security view described in the ***SPECTRUM Portable Management Application for the EMME User's Guide*** or the ***SPECTRUM Portable Management Application for the EMM-E6 User's Guide***. |
| Model Information | Opens the Repeater Model Information view described in ***SPECTRUM Views***. |

**Table 5-2. Network (A, B, or C) Application Subviews Menu (Performance Option)**

| Menu Selection | Description |
|---|---|
| Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Frame & Error Breakdown | Opens the *Repeater Frame & Error Breakdown View* described in Chapter 2, *Device Views*. |
| Frame Size & Protocols | Opens the *Repeater Frame Size & Protocols View* described in Chapter 2, *Device Views*. |

# Isolated Repeater Application

This section describes the Isolated Repeater application supported by this device. The model type for this application is CSIIsolRptr. Table 5-3 lists all the application-specific subviews available from the Icon subviews menu for the Isolated Repeater application.

**Table 5-3. Isolated Repeater Application Subviews Menu**

| Menu Selection | Description |
|---|---|
| Device | Opens the *Chassis Device View* described in Chapter 2, *Device Views*. |
| DevTop | Opens the Device Topology view described ***SPECTRUM Views***. |
| Configuration | Opens the *CSI Isolated Repeater Configuration View* described in Chapter 3, *Configuration Views*. |
| Model Information | Opens the CSI Repeater Model Information view described in ***SPECTRUM Views***. |

# Creating an Isolated Repeater

To reconfigure a selected repeater to a stand _alone mode (isolated), follow these steps:

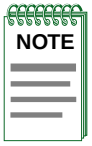
1. Within the Chassis Device view, select a desired Repeater MIM icon (network B or C only).
2. From the Icon Subviews menu, select:
   - For TPXMIM - **Change Module Channel**
   - For other Repeater MIMs- **Repeater -> Change Module Channel**

   to open the Change Module Channel view described in Chapter 2, *Device Views*.
3. Within the Change Module Channel view, select **Stand_Alone** from the Module Connection menu button.
4. From the File menu, choose **Save All Changes**.

To reconfigure the Application view to recognize the new repeater, follow these steps:

1. Within the Application view, select **Edit** from the File menu to enter the edit mode.
2. From the Edit menu, select **Reconfigure**.
3. Within the Rediscover Applications dialog box, click **OK**.
4. From the File menu, select **Save & Close**.

The Application view refreshes and the new CSIIsolRptr Icon appears.




*SPECTRUM also creates isolated repeaters when you insert a MIM into an MMAC FNB non-shunting chassis, where a non-MIM module or empty slot is to the right of the MIM module.*

# DownLoad Application

This application provides download functionality for the EMME/EMM-E6. The model type for this application is CtDownLoadApp.Table 5-4 lists all the application-specific subviews available from the Icon subviews menu for the DownLoad Application. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 5-4. Download Application Subviews Menu**

| Menu Selection | Description |
|---|---|
| DownLoad Application | Opens the DownLoad Application view. This is an SPMA view and is described in the ***SPECTRUM Portable Management Application Tools Guide***. |
| Model Information | Opens the DownLoad Application Model Information view described in ***SPECTRUM Views***. |

# ATM Client Application

This section describes the ATM Client Application supported by this device. The model type for this application is ATMClientApp. Table lists all the application-specific subviews available from the Icon Subviews menu for the ATM Client Application. Table describes a submenu accessible by clicking on the Interfaces option of the Icon Subviews menu. See Chapter 1, *Introduction*, for information on *Accessing Device-Specific Subviews*.

**Table 5-5. ATM Client Application Subviews Menu**

| Menu Selection | Description |
|---|---|
| ATMConfig | Opens the ATM Client Application Configuration view described in Chapter 3, *Configuration Views*. |
| Model Information | Opens the ATM Application Model Information view described in ***SPECTRUM Views***. |
| VCL Table | Opens the *ATM Client Application Virtual Channel Link View* described in this chapter. |
| Interfaces | Allows you to access a submenu for the ATM interface on this module. Table 5-6 lists the menu selections for this interface. |

**Table 5-6. ATM Client Application Subviews Menu (Interfaces option)**

| Menu Selection | Description |
|---|---|
| Performance | Opens the Performance view described in ***SPECTRUM Views***. |
| Configuration | Opens the Port Configuration - BRIMIfATM view described in Chapter 3, *Configuration Views*. |

# ATM Client Application Virtual Channel Link View

This view provides the Virtual Channel Link (VCL) table containing detailed information about the virtual channels passing through this ATM Client Application. In addition, the Row Status Procedure area allows you to create or remove a selected channel from the VCL table. The Virtual Channel Link table provides the following information:

**If Index**
Displays the interface index for this VPI and VCI.

**VPI**
Displays the Virtual Path Identifier (VPI) value. This value is a part of the five-byte ATM header and is used to determine the correct input or output path for the ATM cell.

**VCI**
Displays the Virtual Circuit Identifier (VCI) value. This value is a part of the five-byte ATM header and is used to determine the correct input or output channel for the ATM cell.

**Admin Status**
Specifies the desired administrative state of the VCL. Possible states are: up and down, indicating that the traffic flow for this VCL is enabled or disabled respectively. Administrative status is implemented only for a VCL which terminates a VCC (i.e., one which is not cross-connected to other VCLs). To change the Admin Status for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Select the desired status from the Admin Status menu button.
3. From the File menu, select **Save All Changes**.

**Oper Status**
Indicates the current operational status of the VCL. Possible states are: up, down, and unknown. Up and down states indicate that the VCL is currently operational, or not operational, respectively. The unknown state indicates that the status of this VCL cannot be determined.

**Last Change**
Indicates the value of MIB II's sysUpTime object at the time this VCL entered its current operational state. If the current state was entered prior to the last re-initialization of the agent, this object contains a zero value.

**Rcv Descr Index**
Indicates a row in the ATM Traffic Descriptor table that applies to the receive direction of this VCL. To change the Rcv Descr Index for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Within the Xmit Descr Index field, type the new index number.
3. From the File menu, select **Save All Changes**.

**Xmit Description Index**
Identifies the row of the ATM Traffic Descriptor table which applies the transmit direction of this VCL. To change the Xmit Descr Index for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Within the Xmit Descr Index field, type the new index number.
3. From the File menu, select **Save All Changes**.

**AAL Type**
Indicates the type of the ATM Adaptation Layer (AAL) type used on this VCC. Possible AAL types are: AAL1, AAL34, and AAL5, other, and unknown. This list may also include a user-defined AAL type. The unknown type indicates that the AAL type cannot be determined. AAL type is implemented when the local VCL endpoint is also the VCC endpoint, and AAL is in use. To change the AAL Type for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Select the desired type from the AAL Type menu button.
3. From the File menu, select **Save All Changes**.

**Transmit Size**
Displays the maximum AAL5 CPCS SDU size in octets that is supported on the transmit direction of this VCC. Transmit Size is implemented when the local VCL endpoint is also the VCC endpoint, and AAL5 is in use. The Transmit Size can be altered. The maximum allowable value is 155 Mbs displayed in octets. To change the Transmit Size for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Within the Transmit Size field, type the new Transmit Size number.
3. From the File menu, select **Save All Changes**.

**Receive Size**
Displays the maximum AAL5 CPCS SDU size in octets that is supported on the receive direction of this VCC. Receive Size is implemented when the local VCL endpoint is also the VCC endpoint, and AAL5 is in use. The Receive Size can be altered. The maximum allowable value is 155 Mbs displayed in octets. To change the Receive Size for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Within the Receive Size field, type the new Receive Size number.
3. From the File menu, select **Save All Changes**.

**Encaps Type**
Displays the type of data encapsulation used over the AAL5 SSCS layer. Possible Encaps types are: Routed, Bridged_8023, Bridged_8025, Bridged_8026, LAN_emulation_8023, LAN_emulation_8025, LLC_Encapsulation, Frame_Relay_Sscs, other, and unknown. Encaps type is implemented when the local VCL endpoint is also the VCC endpoint, and AAL5 is in use. To change the Encaps Type for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Select the desired type from the Encaps Type menu button.
3. From the File menu, select **Save All Changes**.

**Cross Connect Id**
Displays an Id for all associated VCLs and their cross-connections that are identified by entries in the Cross Connect table. The Cross Connect Id is initialized by the agent after the associated entries in the Cross Connect Table have been created. The Cross Connect Id is implemented only for a VCL which is cross-connected to other VCLs that belong to the same VCC.

**Row Status**
Displays the row status used while creating, deleting or modifying a row in this table. Possible menu selections are: active, not_in _service, not_ready, create_and_go, create_and_wait, and destroy. To change the Row Status for a specific channel, do the following:

1. Within the Virtual Channel Link table, double-click the selected channel's entry to open the ATM Switch Application Virtual Channel Link view.
2. Select the desired status from the Row Status menu button.
3. From the File menu, select **Save All Changes**.

The Row Status Procedure area of the ATM Client Application Virtual Channel Link view provides the following information and fields that allow you to create or remove a virtual channel link from the Virtual Channel Link table.

**Channel Information**
Allows you to type If Index number, VPI number, and the VCU number for the channel you wish to create or remove.

**Create Channel**

Allows you to add a new virtual channel to the Virtual Channel Link table.

**Remove Channel**

Allows you to remove an existing virtual channel from the Virtual Channel Link table.

To create or remove a virtual channels from the Virtual Channel Link table, follow these steps:

1. Set channel information by typing the If Index number, the VPI number, and the VCI number of the channel you want to add or remove in the Channel Information field. The numbers should be separated by periods.
2. Perform the view update by pressing **enter** or **ctrl**+**s**.
3. Select **Create Channel** or **Remove Channel**.
4. Within the Virtual Channel Link table, select **Update**.

# FddiSMT Application

This section describes the FddiSMT application supported by this device. The model type for this application is FddiSMT. Table lists all the application-specific subviews available from the Icon Subviews menu for the FddiSMT application.

**Table 5-7. FddiSMT Application Icon Subviews Menu**

| Menu Selection | Description |
|---|---|
| DevTop | Opens the Device Topology (DevTop) view described in ***SPECTRUM Views.*** |
| Station List | Opens the FDDI Station view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications***. |
| Configuration | Opens the *SMT Device Configuration View* described in Chapter 3, *Configuration Views*. |
| Model Information | Opens the SMT Model Information view described in ***SPECTRUM Views***. |
| Hub Detail | Opens the FddiSMT Detail view described in ***MIB II Applications, Bridging Applications, and Miscellaneous Applications***. |

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